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Guidance for the Reregistration of Pesticide Products Containing Mevinphos as the Active Ingredient

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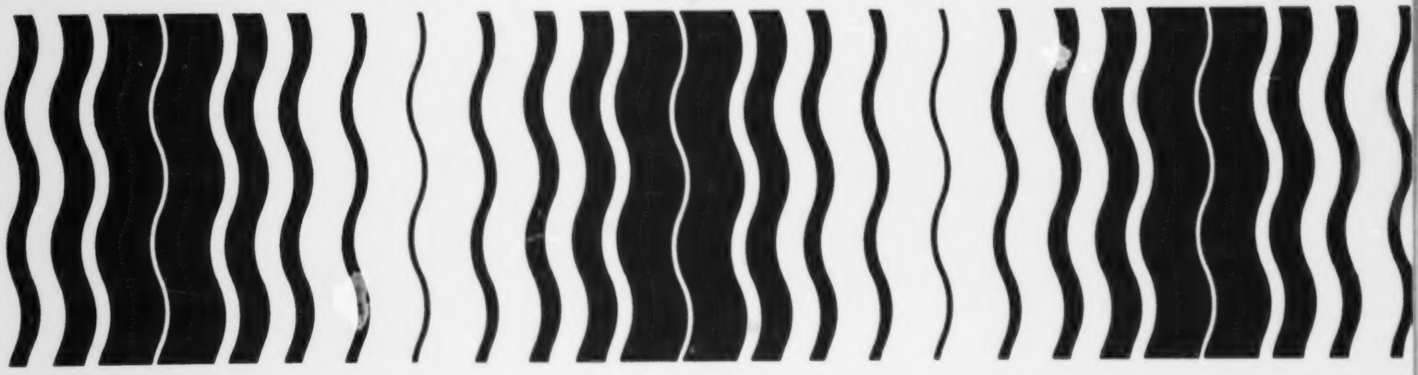
Guidance for the Reregistration of Pesticide Products Containing MEVINPHOS as the Active Ingredient



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GUIDANCE FOR THE
REREGISTRATION OF PESTICIDE PRODUCTS
CONTAINING
MEVINPHOS
AS THE ACTIVE INGREDIENT

CAS REGISTRY NO. 7786-34-7

OPP SHAUGHNESSY NO. 015801

EPA CASE NUMBER GS-0250

MARCH 31, 1988

ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF PESTICIDE PROGRAMS
WASHINGTON, D.C. 20460

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GLOSSARY OF TERMS AND ABBREVIATIONS

ADI:	Acceptable Daily Intake
a.i.:	active ingredient
CAS:	Chemical Abstract Services (number)
CSF:	Confidential Statement of Formula
EC_{50}:	Median Effective Concentration - the concentration of substance producing a specific effect or response in 50 percent of the test organisms.
EEC:	Estimated Environmental Concentration - an estimate of the concentration of a pesticide occurring in or on various media (i.e., soil, water, vegetation) after pesticide application.
EPA:	The U.S. Environmental Protection Agency (Agency)
FIFRA:	The Federal Insecticide, Fungicide, and Rodenticide Act
LC_{50}:	Median Lethal Concentration - a statistically derived concentration of a substance that can be expected to cause death in 50% of test animals, expressed as weight or volume of test substance per volume of air or water or per weight of feed (e.g., mg/l or ppm).
LD_{50}:	Median Lethal Dose - a statistically derived single dose that can be expected to cause death in 50% of test animals when administered by the route indicated, expressed as weight of substance per unit weight of test animal (e.g., mg/kg).
LEL:	Lowest Effect Level
MPI:	Maximum Permissible Intake
MRID:	Master Record Identification (number) - EPA's system of tracking studies used in support of registration.
NPDES:	National Pollution Discharge Elimination System
NOEL:	No Observed Effect Level
OPP:	The Office of Pesticide Programs of the U.S. EPA
OES:	The Office of Endangered Species, U.S. Fish and Wildlife Service
RfD:	Reference Dose

I. INTRODUCTION

EPA has established the Registration Standards program in order to provide an orderly mechanism by which pesticide products containing the same active ingredient can be reviewed and standards set for compliance with FIFRA. The standards are applicable to reregistration and future applications for registration of products containing the same active ingredient. Each registrant of a product containing an active ingredient subject to this Standard who wishes to continue to sell or distribute that product must bring his product and labeling into compliance with FIFRA, as instructed by this Standard.

The Registration Standards program involves a thorough review of the scientific data base underlying a pesticide's registration. The purpose of the Agency's review is to reassess the potential hazards arising from the currently registered uses of the pesticide; to determine the need for additional data on health and environmental effects; and to determine whether the pesticide meets the "no unreasonable adverse effects" criteria of FIFRA. In its review EPA identifies:

1. Studies that are acceptable to support the data requirements for the currently registered uses of the pesticide.

2. Additional studies necessary to support continued registration. The additional studies may not have been required when the product was initially registered or may be needed to replace studies that are now considered inadequate.

3. Labeling revisions needed to ensure that the product is not misbranded and that the labeling is adequate to protect man and the environment.

The detailed scientific review, which is not contained in this document, but is available upon request[1], focuses on the pesticide active ingredient. The scientific review primarily discusses the Agency's evaluation of and conclusions from available data in its files pertaining to the pesticide active ingredient. However, during the review of these data the Agency is also looking for potential hazards that may be associated with the end use products that contain the active ingredient. The Agency will apply the provisions of this Registration Standard to end use products if necessary to protect man and the environment.

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[1] The scientific reviews may be obtained from the Information Services Section, Program Management and Support Division (TS-757C), EPA, 401 M St., SW, Washington, D.C. 20460.

EPA's reassessment results in the development of a regulatory position, contained in this Registration Standard, on the pesticide and each of its registered uses. See Section IV-Regulatory Position and Rationale. Based on its regulatory position, the Agency may prescribe a variety of steps to be taken by registrants to maintain their registrations in compliance with FIFRA. These steps may include:

1. Submission of data in support of product registration;

2. Modification of product labels;

3. Modifications to the manufacturing process of the pesticide to reduce the levels of impurities or contaminants;

4. Restriction of the use of the pesticide to certified applicators or other specially trained individuals;

5. Modification of uses or formulation types; or

6. Specification of packaging limitations.

Failure to comply with these requirements may result in the issuance of a Notice of Intent to Cancel or a Notice of Intent to Suspend (in the case of failure to submit data).

In addition, in cases in which hazards to man or the environment are identified, the Agency may initiate a special review of the pesticide in accordance with 40 CFR Part 154 to examine in depth the risks and benefits of use of the pesticide. If the Agency determines that the risks of the pesticide's use outweigh the benefits of use, the Agency may propose additional regulatory actions, such as cancellation of uses of the pesticide which have been determined to cause unreasonable adverse effects on the environment.

EPA has authority under the Data Call-In (DCI) provisions of FIFRA sec. 3(c)(2)B) to require that registrants submit data to answer our questions regarding the chemical, toxicological, and environmental characteristics and fate of a pesticide. This Registration Standard lists the data EPA believes are necessary to resolve our concerns about this pesticide. These data are listed in the Tables A, B, and C. in Appendix I. Failure to comply with the DCI requirements enumerated in this Registration Standard may result in issuance by EPA of a Notice of Intent to Suspend the affected product registrations.

Registrants are reminded that FIFRA sec. 6(a)(2) requires them to submit factual information concerning possible unreasonable adverse effects of a pesticide at any time that they become aware of such information. Registrants must notify the Agency of any information, including interim or preliminary results of studies, if that information suggests possible adverse effects on man or the environment. this requirement is independent of the specific time requirements imposed by EPA for submission of completed studies called in by the Agency and continues as long as the products are registered under FIFRA.

II. CHEMICAL COVERED BY THIS STANDARD

A. Description of Chemical

The following chemical is covered by this Registration Standard:

Common Name: Mevinphos

Chemical Name: 3-[(Dimethoxyphosphinyl)oxy]-2-butenoic acid methyl ester; 3-hydroxycrotonic acid methyl ester dimethyl phosphate.

Trade Names: Apavinphos, Duraphos, Menite, Mevinox, OS-2046, Phosdrin, and Phosfene

Chemical Class: Organophosphate

Empirical Formula: $C_7H_{13}O_6P$

Molecular Weight: 224.1

CAS Registry No.: 7786-34-7

ENT Registry No.: 22374

OPP Shaughnessy No.: 015801

Year of Initial Registration: early 1950s

U.S. and Foreign Producers: E.I. DuPont (U.S.); Amvac Chemical Corp. (U.S.); APA Spa (Italy); Comlets Chemical Industrial Co., Ltd. (Taiwan); GENP International Corp. (Taiwan); KenoGard VT AB (Sweden); and Shell International Chemical Co., Ltd. (England)

Physical/chemical properties of mevinphos.

Color: light yellow to orange

Physical State: Liquid

Odor: Mild to none

Boiling Point: 99 - 103°C at 0.03 mm Hg

Density: 1.24 at 16°C

Solubility: Miscible with water, acetone, benzene, carbon tetrachloride, chloroform, ethanol, isopropanol, methanol, toluene, and xylene; slightly soluble in carbon disulfide and kerosene; insoluble in hexane.

Vapor Pressure: 0.003 mm Hg at 21°C

pH: 3.2 - 3.5 (0.25%)

B. Use Profile

Mevinphos is a broad spectrum organophosphate insecticide/acaricide registered for use to control a wide variety of pests on field, forage, vegetable, fruit crops; one greenhouse food crop (lettuce); one aquatic food crop (watercress); and one aquatic nonfood use (sewage disposal plants).

Usage information indicates that about 25% of the mevinphos used in the United States is applied to alfalfa. The second major use, approximately 20%, is on lettuce. Use on cole crops (15%) is third, and in decreasing volume, artichoke (7%), beans (5%), grapes and potatoes (each 4%), apples, sweet corn, and sugar beets (each 3%), corn and strawberries (each 2%), and carrots, celery, melons, onions and turf (each 1%). Other uses (peppers and tomatoes) account for less than one percent individually.

Mevinphos is marketed as 2% dust (D) formulations; 1, 2, and 4 pound (lb) active ingredient (ai) per gallon (gal) emulsifiable concentrate formulations (EC); 25.4% EC formulation; 2, 4, and 10.3 lb/gal soluble concentrate/liquid (SC/L) formulations; and 3.64 and 5% ready to use (RTU) formulations. Foliar applications of mevinphos may be applied to crops using conventional ground or aerial equipment. Foliar applications are also permitted in greenhouses. Water treatment is permitted in sewage disposal plants.

There are 49 federally registered [FIFRA Section 3] products (2 technical and 47 end-use), 16 Special Local Need [FIFRA Section 24c)] registrations, and 36 intrastate registrations containing mevinphos as a single active ingredient. There are also 3 federally registered end-use products and 19 intrastate registrations containing mevinphos in combination with one or more of the following active ingredients:

> endosulfan, *Bacillus thuringiensis*, diazinon, mancozeb, pyrethrin I + piperonyl butoxide, sulfur, zineb.

The Agency has classified all mevinphos end-use products as Restricted Use pesticides, based on acute toxicity. Applicators must be certified or under the direct supervision of applicators certified to apply mevinphos.

As an organophosphate, mevinphos exerts its toxic action by inhibiting certain important enzymes of the nervous system (cholinesterase).

III. AGENCY ASSESSMENT

A. Summary Science Findings

The following is a summary of scientific findings based on the data available to the Agency.

1. Toxicology

Mevinphos is an organophosphorus compound and is a potent cholinesterase inhibitor. Except for a teratology study conducted in the rat, the Agency has no acceptable toxicology data for mevinphos. Results of a preliminary review of recently received studies are consistent with a Toxicity Category I classification for acute oral and acute dermal toxicity for mevinphos. In the rat teratology study 24 mated female Sprague-Dawley rats were dosed by gastric intubation with 0, 0.20, 0.75, 1.00, and 1.25 mg/kg/day of technical mevinphos in water on gestation days 6 through 15. Based on data from this study, the Agency determined that the fetotoxic, embryotoxic, and teratogenic NOELs were >1.00 mg/kg/day and concluded that mevinphos does not induce developmental effects in rats.

2. Worker Exposure

The use of mevinphos poses risks to mixer/loaders, applicators, and persons reentering fields treated with mevinphos. Exposure may be by dermal, inhalation, and ocular routes of entry. A review of poisoning incident data provided by California (the only State that enforces mandatory reporting of occupational pesticide incidents), indicates that acute systemic toxicity, as well as skin and eye injuries, continue to be a serious problem for pesticide applicators, mixer/loaders, and field workers. During the period from 1982 through 1986 a total of 89 illnesses were reported as being due to exposure to mevinphos. Physicians reported treating an average of 16.6 mevinphos poisonings each year during that time period. In addition, an average of 1.2 mevinphos related skin or eye injury cases per year were reported.

Federally registered end-use mevinphos products currently have a reentry statement on the label that reads "Do not enter treated areas without protective clothing until sprays have dried." As a result of the Agency's review of foliar dislodgeable residue data submitted in response to the July 1985 reentry data call-in for mevinphos, and in response to reports of fieldworker poisoning incidents attributed to mevinphos, the Agency is requiring reentry intervals for mevinphos as follows:

96 hours (4 days) for citrus, grapes, nectarines and peaches.

48 hours (2 days) for all other treated crops (leafy vegetables, strawberries, corn, melons, etc.).

3. Ecological Effects

The ecological effects data available to the Agency show that technical mevinphos is very highly toxic to birds on an acute oral basis; highly toxic to upland game birds and slightly toxic to waterfowl on a dietary basis; very highly toxic to both warmwater and coldwater fish species; very highly toxic to aquatic invertebrates; highly toxic to the brown shrimp and sheepshead minnow and moderately toxic to the Eastern oyster; and highly toxic to honey bees. Because of its demonstrated toxicity to nontarget species and its intended use pattern, mevinphos has been identified by the Office of Endangered Species (OES), U.S. Fish and Wildlife Service (FWS), as being likely to jeopardize endangered species when used on corn and sorghum.

4. Environmental Fate

The available data are insufficient to fully assess the environmental fate of mevinphos, including the potential for groundwater contamination, mevinphos' persistence in the environment, and the need for crop rotational label restrictions. Data gaps exist for nearly all applicable studies.

5. Tolerance Reassessment

Insufficient data are available for the Agency to ascertain the adequacy of the established tolerances for residues of mevinphos alpha and beta isomers.

B. SUMMARY OF DATA GAPS

The Agency has identified missing data necessary to fully evaluate the human and environmental risks associated with the use of mevinphos. A summary of those data gaps is given below. Please note, this is only a summary and complete details can be obtained by referring to the data tables in Appendix I. These data must be developed in order to maintain registrations of existing products or to register any new products containing mevinphos.

Toxicology

Acute Oral Toxicity
Acute Dermal Toxicity
Acute Inhalation Toxicity
Primary Eye Irritation
Primary Dermal Irritation
Dermal Sensitization
Acute Delayed Neurotoxicity

Acute Dermal (to define lethality, toxicity, and ChE NOELs)
Subchronic 90-Day Feeding, two species (rodent and nonrodent)[2]
Subchronic 90-Day Inhalation (to define toxicity from greenhouse exposure)
Subchronic 21 Day Dermal
Subchronic Neurotoxicity (conditionally in hen and/or mammal)
Chronic Toxicity, two species (rodent and nonrodent)
Oncogenicity, two species
Teratogenicity (rabbit)
Reproduction
Mutagenicity (full battery - Gene Mutation, Chromosomal Aberration and Other Mechanism of Mutagenicity Studies)
Metabolism

Environmental Fate/Exposure

Hydrolysis
Photodegradation, water
Photodegradation, soil
Photodegradation, air
Aerobic Soil Metabolism
Anaerobic Soil Metabolism
Anaerobic Aquatic Metabolism
Volatility, laboratory
Volatility, field (pending results of the laboratory volatility study)
Terrestrial Field Dissipation
Aquatic Field Dissipation
Soil Dissipation, long term (reserved pending the results of the laboratory fish accumulation study)
Confined Accumulation, rotational crops

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[2] This requirement is waived since chronic studies are required.

- Field Accumulation, rotational crops (deferred pending receipt of acceptable confined rotational crop accumulation data)
- Accumulation, irrigated crops
- Fish Accumulation, laboratory
- Field Accumulation, aquatic nontarget organisms (deferred pending the receipt of acceptable accumulation in laboratory fish data)
- Leaching and Adsorption/Desorption
- Droplet Size Spectrum
- Drift Field Evaluation

Ecological effects

- Wild Mammal Toxicity
- Avian Reproduction (upland game bird and waterfowl)
- Freshwater Fish LC_{50} (warmwater and coldwater species) (test material: typical end-use product)
- Freshwater Invertebrate LC_{50} (test material: typical end-use product)
- Estuarine and Marine Organisms LC_{50} (fish and shrimp)
- Fish Early Life Stage and Invertebrate Life Cycle
- Aquatic Organism Accumulation
- Honeybee - Toxicity of Residues on Foliage
- Special Test - (Terrestrial Residue Monitoring of Avian and Mammalian Food Items)

Residue Chemistry

- Nature of Residues (Plants, Livestock)
- Storage Stability
- Magnitude of Residues

Product Chemistry

- All product chemistry studies

C. PRELIMINARY HEALTH RISK ASSESSMENT

Numerous data gaps exist for mevinphos and few definitive conclusions can be made pending receipt of additional data. However, the Agency is concerned with the number of mevinphos poisoning incidents that have been reported in California, and believes that they may reflect a nationwide problem. The Agency is also concerned about acute toxicity of mevinphos to birds and aquatic organisms.The following preliminary health risk assessment is based on the available data.

1. Acute Toxicity

There are no acceptable acute toxicology studies available for technical mevinphos. Mevinphos is an organophosphate insecticide whose primary mechanism of action is inhibition of cholinesterase activity. Because mevinphos is a potent cholinesterase inhibitor, as indicated by two chronic feeding studies reviewed by the Agency, there is a potential for accidental poisoning, with neurologic involvement, of applicators and farmers who are not protected. Technical mevinphos is currently labeled as a Toxicity Category I pesticide. Results of a preliminary review of recently received studies are consistent with a Toxicity Category I classification for acute oral and dermal toxicity for mevinphos. Therefore, the currently assigned Toxicity Category I will be retained until additional acute data for mevinphos are received and/or evaluated.

2. Subchronic Toxicity

There are no subchronic feeding data available. However, these data requirements are waived since chronic feeding studies are required. A subchronic 90-day dermal study is not required because of the nature of the exposure pattern. The requirement for a subchronic 90-day neurotoxicity study is reserved pending the results of the required acute neurotoxicity study in hens and whether neurotoxic lesions are found in mammalian studies. A subchronic 21-day dermal study is required. A subchronic 90-day inhalation study is required to support the use of mevinphos in greenhouses.

3. Chronic Toxicity

Only supplementary chronic feeding studies for the dog and the rat were reviewed. In the dog chronic feeding study groups of 4 male and 4 female beagles were dosed daily by gelatin capsule with technical mevinphos at doses of 0 (vehicle control), 0.025, 0.075, 0.25, and 0.75 milligrams per kilogram of body weight per day (mg/kg/day). The doses were selected to approximate diet doses of 0, 0.5, 1.5, 5.0, and 15.0 parts per million (ppm). A cholinesterase inhibition no observed effect level (NOEL) of 0.025 mg/kg/day was reported in this study. In a similar study in rats groups of 39 male and 39 female Carworth Farm E rats were dosed with diets containing technical mevinphos at nominal doses of 0.5, 1.5, 5.0, and 15.0 ppm (0.019, 0.056, 0.186, and 0.557 mg/kg/day). The rat chronic feeding study reported a cholinesterase inhibition NOEL of 0.019 mg/kg/day. These data indicate that mevinphos is a potent cholinesterase inhibitor. Because these studies were unacceptable for filling this data requirement, the submission of acceptable rodent and nonrodent studies is required.

4. Oncogenicity

No acceptable data are available on the oncogenic potential of mevinphos. Oncogenicity studies are required in two species.

5. Developmental Effects (Teratogenicity)

The Agency reviewed teratology studies for the rat and rabbit, but only the rat study was found to be acceptable. Because the rabbit study had serious deficiencies, the Agency is requiring the submission of an acceptable rabbit teratology study.

In the rat teratology study, groups of 24 male and 24 female Sprague-Dawley rats were mated by cohabitation. The females were dosed by gastric intubation with 0, 0.20, 0.75, 1.00, and 1.25 mg/kg/day of technical mevinphos in water on gestation days 6 through 15. The 1.25 mg/kg/day dose group was terminated early because of high mortality. In this study the maternal NOEL was 0.20 mg/kg/day; the maternal Lowest Effect Level (LEL) was 0.75 mg/kg/day; the fetotoxic NOEL, embryotoxic NOEL, and teratogenic NOEL were >1.00 mg/kg/day. The Agency concluded that mevinphos does not induce developmental effects in rats.

6. Reproductive effects

No acceptable data are available to evaluate the reproductive toxicity of mevinphos. A reproductive study is required.

7. Mutagenicity

No acceptable data are available to evaluate the mutagenic potential of mevinphos. Gene mutation, chromosomal aberration, and other mechanism of mutagenicity studies are required.

8. Metabolism

No data are available on the metabolic pathway of mevinphos. A metabolism study is required.

9. Worker Exposure

The Agency has evaluated available poisoning incidence data for mevinphos and has concluded that mevinphos causes poisonings among all categories of workers who use or come into direct contact with the pesticide. This risk of poisoning extends not only to mixer/loaders and applicators, but to formulators, transporters/warehouse handlers, fieldworkers and bystanders as well.

Poisoning reports from California (the only state which enforces mandatory reporting of occupational pesticide incidents and, at present, the only reliable source of such information) show that mevinphos was among the top five pesticides in California in terms of frequency of occupational pesticide poisoning during the period from 1980 to 1986. The California data are summarized in Table 1.

Table 1. Summary Data on Major Causes of Occupational Pesticide Poisoning in California, 1980 - 1986

Top 5 Pesticides by Number of Systemic Poisonings		Top 5 Pesticides by Number of Individuals Hospitalized		Top 5 Pesticides by by Number of Days of Hospitalization	
1. Diazinon	197	1. Mevinphos	27	1. Methyl Bromide	131
2 Mevinphos	194	2. Parathion	18	2. Parathion	77
3. Malathion	164	3. Methomyl	17	3. Mevinphos	53
4. Chlorpyrifos	146	4. Methyl Bromide	16	4. Methomyl	32
5. Parathion	143	5. Aluminum Phosphide	10	5. Diazinon	29
		and Diazinon	10		

SOURCE: "California Poisoning Reports". Various Reports issued by the California Department of Food and Agriculture, Sacramento, California. Included are reports number HS-322, HS-544, HS-545, HS-985, HS-1098, HS-1186, HS-1188, HS-1304, HS-1305, HS-1370, and HS-1371.

Based on a 12 percent sample of the nation's hospitals, mevinphos was estimated to have caused an average of 41 hospitalizations each year during the time period 1971 through 1976, accounting for 1.4 percent of the total pesticide poisonings in the United States. This estimate was based on 29 observed occupationally-related cases, and 2 nonoccupationally-related cases.

From 1974 to 1976, mevinphos was associated with 98.6 occupational hospitalizations per 1 million pounds of mevinphos reported used in agriculture in 1974. The average ratio of poisonings for all pesticides was 0.9 cases per million pounds reported in use. This ratio, 98.6, is the highest among the 20 pesticides examined which included parathion, methomyl, methyl bromide, malathion and diazinon, most of which are known to be highly toxic.

Based on data obtained from California, physicians treated an average of 16.6 mevinphos poisonings each year from 1982 through 1986. An additional 1.2 cases per year were reported as either due to skin or eye injury. Of the 89 mevinphos related illnesses reported in this period 10 were related to application, 40 were due to exposure to residues or drift, 24 were due to mixing/loading, 4 were in manufacturing or formulating plants and 11 in other worker activities. Between 1980 and 1986, there were 27 hospitalized cases of occupational mevinphos poisoning, more than for any other pesticide. 98 workers were reported to have lost time from work due to mevinphos poisoning for a total of 495 days. Table 2 lists the number of reported mevinphos poisoning incidents among different job categories in California from 1976 through 1986.

The ratio of occupational mevinphos poisonings in California for the years 1981 through 1985 were compared with the pounds reported sold for the years 1981 through 1984. The ratio for mevinphos was 43.2 systemic poisonings per 1 million pounds sold. The average ratio for all pesticides was 1.3.

The Agency has requested further information from the state of California concerning these reported poisoning incidents, in order to evaluate the causes of the high poisoning rates for mevinphos and to develop possible risk reduction measures.

Table 2. Illness Due to Mevinphos Exposure Reported by Type of Illness and Job Category for 1976 through 1986 in California.

TYPE OF ILLNESS/ JOB CATEGORY	1976-78	1979-81	1982-84	1985-86	TOTAL FOR 11 YRS
SYSTEMIC ILLNESS					
Ground Applicator	20	19	4	5	48
Aerial Applicator	2	0	1	0	3
Mixer/Loader[1]	73	37	17	5	132
Field Worker	0	63	3	0	66
Coincidental (drift)	3	1	32	2	38
Warehouse/ Transportation	4	3	0	0	7
Manufacturing/ Formulation	14	5	1	3	23
All Other	21	15	10	0	46
SUBTOTAL	137	143	68	15	363
SKIN OR EYE INJURIES					
Ground Applicator	0	1	0	0	1
Mixer/Loader[1]	4	0	2	0	6
Warehouse/ Transportation	1	0	0	0	1
Manufacturing/ Formulation	2	0	0	0	2
Field Worker	1	0	3	0	4
All Other	1	0	1	0	2
SUBTOTAL	9	1	6	0	16
TOTAL MEVINPHOS ILLNESS AND INJURIES	146	144	74	15	379

[1] Requirement that mevinphos be mixed and loaded in a closed system was initiated in 1977 and fully implemented in 1978.

D. ENVIRONMENTAL PROFILE

1. Environmental Fate

Available data reviewed by the Agency are not sufficient to fulfill the data requirements. Therefore, the environmental fate of mevinphos cannot be fully assessed.

Mevinphos residues are considered to be very mobile in sandy loam, silt loam, loam, and clay loam soils. Freundlich K_{ads} values ranged from 0.392 to 1.92 and Freundlich K_{des} values ranged from 1.16 to 3.53.

Available data are not adequate to fully assess the potential of mevinphos to contaminate ground water. When the required data are submitted, the potential of mevinphos and its degradates to contaminate ground water will be reassessed.

2. Reentry

Currently, reentry to areas treated with mevinphos is prohibited until sprays have dried, unless appropriate protective clothing is worn. This reentry requirement was imposed in 1974 on all agricultural pesticides. California has imposed a four day reentry interval for citrus, grapes, peaches, and nectarines, and a three day reentry interval for all other crops. New Jersey and Texas require a two day reentry interval for all crops treated with mevinphos.

Mevinphos is a highly acutely toxic organophosphate pesticide (Toxicity Category I) and a potent cholinesterase inhibitor. According to data from California, between 1976 and 1985 mevinphos had the largest number of systemic poisoning incidents of any agricultural pesticide in the category of fieldworkers exposed to pesticide residue.

In 1985 the Agency required registrants of mevinphos products to submit appropriate reentry studies. These data have been submitted and reviewed, and the Agency has determined that the following reentry intervals are necessary to protect fieldworkers from excessive exposure:

96-hours (4-days) for citrus groves, grape vineyards, nectarine and peach orchards; and

48-hours (2-days) for all other mevinphos treated crops.

3. Spray Drift

There are no data available to assess the hazard to nontarget organisms (fish and wildlife, domestic animals, and humans) caused by drift from aerial applications of mevinphos. However, poisoning reports from California show that there were 34 cases of occupational poisoning resulting from drift from aerial applications of mevinphos in California from 1982 through 1986. Because mevinphos products may be aerially applied and because of the number of occupational poisonings associated with drift from aerial applications of mevinphos, the Agency is requiring droplet size spectrum data and spray drift field evaluation data for mevinphos. The requirement for human exposure is reserved and may be needed after the Agency receives the required toxicology data and establishes a toxicity category for mevinphos.

4. Ecological Characteristics

a. Avian Species

Technical mevinphos has been demonstrated to be very highly toxic to birds on an acute oral basis. On a dietary basis technical mevinphos has been demonstrated to be highly toxic to upland game birds but only slightly toxic to waterfowl.

Acute oral toxicity tests with birds resulted in acute toxicity values ranging from 1.34 mg/kg in the sharp-tailed grouse to 4.63 mg/kg in the mallard. Subacute dietary studies demonstrate that there is a range of toxicity from 236 ppm in the Japanese quail to 1991 ppm in the mallard. Additional acute data are not required.

Because of the toxicity of mevinphos to birds and the patterns of avian exposure, the use of mevinphos at the higher application rates is expected to result in adverse effects to small songbirds. Monitoring of mevinphos residues on such avian food items as forage, insects, and seeds is required.

Avian reproduction studies for mevinphos are not available. Data are required to support uses of mevinphos on crops with multiple applications. Repeat applications are allowed for all uses of mevinphos. Therefore, avian reproduction studies with an upland game bird species and a waterfowl species are required.

b. Aquatic Species

The acute toxicity tests with technical mevinphos indicate that mevinphos is very highly toxic to both warmwater and coldwater fish species. The 96-hour acute toxicity for rainbow trout is 11.9 parts per billion (ppb) and for the bluegill sunfish 22.5 ppb. No additional acute data are required for technical mevinphos. However, since mevinphos is registered for use on watercress, a use involving direct application to water, acute toxicity studies in both a warmwater and a coldwater fish species are required using an end-use mevinphos product (preferably a 4 lb/gal EC). A fish early life stage study is also required and a fish life cycle study may be required depending on the results of lower tier studies and the receipt and evaluation of a complete environmental fate profile for mevinphos.

Acute toxicity tests with freshwater invertebrates indicate that technical mevinphos is very highly toxic to aquatic invertebrates. The acute toxicity values ranged from 0.18 ppb for *Daphnia pulex* to 5.00 ppb for *Pteronarcys californica*. Additional acute data are not required for technical mevinphos. The Agency has no data on the acute toxicity of formulated end-use mevinphos products to freshwater invertebrates. Acute aquatic toxicity studies on freshwater invertebrates with the formulated product may be required when the estimated environmental concentration (EEC) exceeds the EC$_{50}$ of the technical material to freshwater invertebrates. The Agency's calculations show the EEC for mevinphos to be 3.05 ppb for foliar application to corn, sorghum, alfalfa, and vegetables (3.35 ppb for aerial application); 1.525 ppb for foliar application to artichokes and chinese cabbage (1.68 ppb for aerial application); and 6.1 ppb for foliar application to vegetable crops and grapes (6.71 ppb for aerial application). Because the lowest aquatic EEC (for field crops, 3.05 ppb) exceeds the *Daphnia* EC$_{50}$ (0.18 ppb) by 17 times, data are required on the toxicity of a typical end-use product (the 4 lb/gal EC formulation) to freshwater invertebrate.

Since aquatic invertebrate life-cycle data are not available, no conclusions can be drawn regarding the chronic effects of mevinphos on aquatic invertebrates. Mevinphos is expected to be transported to water through spray drift during normal use. EECs derived from spray drift models for orchards (apples, 9.2 ppb) and for general field crop use (corn, at 0.5 lbs/A, 3.35 ppb) well exceed the EC$_{50}$ of technical mevinphos to *Daphnia*. Therefore, an aquatic invertebrate life cycle study is required.

The acute toxicity tests with estuarine and marine organisms indicate that mevinphos is no more than moderately toxic to the Eastern oyster, with an EC$_{50}$ (96-hour shell deposition) of greater than 1000 ppb and at least in the "highly toxic" range for brown shrimp (EC$_{50}$ of 150 ppb) and sheepshead minnow (LC$_{50}$ of 640 ppb). The tests with brown shrimp and sheepshead minnow were run for only 48 hours rather than 96 hours as required. Acute studies on the toxicity of mevinphos to shrimp and marine fish are required. Testing on a typical end-use mevinphos product may also be required depending on the results of the acute toxicity testing with technical mevinphos on marine and estuarine organisms.

c. Wild Mammal Toxicity

Unvalidated data indicate that mevinphos is highly toxic to mammals, with LD_{50} values to rats ranging from 3.7 to 12 mg/kg. A five-day dietary toxicity study with a species of wild mammal is required, along with residue monitoring of mammalian food items.

d. Endangered Species

There are sufficient data to indicate that the currently registered uses of mevinphos may affect endangered species.

In aquatic environments, all maximum application rates for the various uses (0.25 to 3.00 lb ai/A) are expected to result in aquatic concentrations above 1/20th the LC_{50} to rainbow trout (1/20 x 11.9 = 0.595 ppb). There are substantial concerns for any aquatic species that may be exposed to mevinphos.

In terrestrial environments, 1/10th the LC_{50} to ring-necked pheasant (1/10 x 246 = 24.6 ppm) is exceeded on most avian food items at most application rates. For example, residue levels on small insects and forage exceed the avian endangered species trigger at application rates of 0.5 lb ai/A and above; residues on pods containing seeds exceed this level at 2.0 lb ai/A. Grasses adjacent to treated fields or associated with orchard trees also show residue levels that are high relative to this endangered species trigger. Grasses are an important food item for waterfowl; mevinphos, however, is only slightly toxic to waterfowl, with an LC_{50} of 1991 ppm. Even so, residue levels on short grass growing as an orchard understory exceed 1/10th the mallard LC_{50} (1/10 x 1991 = 199 ppm) at the label rate for apples and pears (3.0 lb ai/A). There are substantial concerns for endangered species with habitats overlapping mevinphos use sites. Endangered small mammals are also expected to be at risk, since the acute oral toxicity of mevinphos to mammals is in the same range as the avian acute oral LD_{50} (rat LD_{50} = 3.7 to 12 mg/kg).

Because of its demonstrated toxicity to nontarget species and its intended use pattern, mevinphos has been identified by the Office of Endangered Species (OES), U.S. Fish and Wildlife Service (FWS), as being likely to jeopardize endangered species when used on corn and sorghum. Based on this determination, OES specified reasonable and prudent alternatives to avoid jeopardizing the continued existence of the identified species by these uses. EPA is working with the Fish and Wildlife Service and other Federal and State agencies to implement the alternatives in a technically sound manner.

e. Non-target Insects

Data from honey bee acute contact toxicity studies indicate that mevinphos is highly toxic to honey bees, when bees are exposed to direct application or oral routes. The requirement for a honey bee acute contact study is fulfilled. However, because the acute data indicate high toxicity, a residual toxicity study is required.

There is sufficient information to indicate that mevinphos, when used at standard field rates, is generally highly toxic to predacious mites, parasitic wasps, and predacious beetles. Study requirements for testing on predacious and parasitic insects are currently reserved pending development of test protocols.

E. TOLERANCE REASSESSMENT

Tolerances for residues of the insecticide mevinphos (Methyl 3-[(dimethoxyphosphinyl)oxy]butenoate, alpha and beta isomers) have been established in or on various raw agricultural commodities (40 CFR 180.157) and as a food additive in food for human consumption (21 CFR 193.290). The present United States tolerances for residues of mevinphos in or on raw agricultural commodities, Mexican tolerances, and several International Maximum Residue Limits (MRLs) recommended by the Codex Alimentarius Commission are listed in Table 3 below. The current United States food additive tolerance levels for mevinphos are listed in Table 4 below. The Agency has evaluated the residue and toxicology data supporting these tolerances and has determined that it does not have sufficient data to support the currently established tolerances for residues of mevinphos alpha and beta isomers in or on raw agricultural commodities (RACs). Therefore, because of extensive residue chemistry and toxicology data gaps, a full tolerance reassessment for mevinphos cannot be made at this time. In addition, processing studies are required for apples, citrus fruits, grapes, plums, potatoes, tomatoes, corn, and sorghum.

Table 3. Summary of Present Mevinphos Tolerances

Commodity	Tolerances (ppm) United States	Canada	Mexico	(MRL) International (Codex)
Alfalfa	1.0	-----	1.0	-----
Apples	0.5	0.25	0.5	0.5
Artichokes	1.0	-----	1.0	-----
Beans	0.25	-----	0.25	-----
Beets, garden (including tops)	1.0	-----	-----	-----
Birdsfoot trefoil, forage	1.0	-----	-----	-----
Birdsfoot trefoil, hay	1.0	-----	-----	-----
Broccoli	1.0	0.25	1.0	1.0
Brussels sprouts	1.0	0.25	-----	1.0
Cabbage	1.0	0.25	-----	1.0
Carrots	0.25	0.1	0.5	0.1
Cauliflower	1.0	0.25	-----	1.0
Celery	1.0	0.25	1.0	-----
Cherries	1.0	-----	-----	1.0
Chicory, red (tops) (also known as radicchio)	0.5	-----	-----	-----
Citrus	0.2	0.2	0.25	0.2
Clover	1.0	-----	-----	-----
Collards	1.0	0.25	-----	-----
Corn, field, forage	1.0	-----	1.0	-----
Corn, grain, field	0.25	-----	0.25	-----
Corn, pop, forage	1.0	-----	1.0	-----
Corn, pop, grain	0.25	-----	0.25	-----
Corn, sweet (K+CWHR)*	0.25	-----	0.25	-----
Corn, sweet, forage	1.0	-----	1.0	-----
Cucumbers	0.2	-----	0.25	0.2
Eggplant	0.25	-----	0.25	-----
Grapes	0.5	-----	0.5	0.5
Kale	1.0	0.25	-----	1.0
Lettuce	0.5	0.25	0.5	0.5
Melons (including cantaloupes, honeydew mellon, and muskmelon, determined on the edible portion with rind removed)	0.5	-----	0.5	0.05
Mustard greens	1.0	0.25	-----	-----
Okra	0.25	-----	0.25	-----
Onions (green)	0.25	0.25	0.25	-----
Parsley	1.0	-----	-----	-----
Peaches	1.0	0.25	1.0	0.5
Pears	0.5	0.25	0.5	0.2
Peas	0.25	-----	0.25	0.1

Table 3. Summary of Present Mevinphos Tolerances (continued)

	Tolerances (ppm)			(MRL)
Commodity	United States	Canada	Mexico	Inter-National (Codex)
Pea vines	1.0	-----	-----	-----
Peppers	0.25	-----	0.25	-----
Plums	1.0	0.25	-----	-----
Potatoes	0.25	0.1	0.25	0.1
Raspberries	1.0	0.25	-----	-----
Sorghum, forage	1.0	-----	-----	-----
Sorghum, grain	1.0	-----	1.0	-----
Spinach	1.0	0.25	1.0	0.5
Squash, summer	0.25	-----	0.25	-----
Strawberries	1.0	0.25	1.0	1.0
Tomatoes	0.2	0.25	0.25	0.2
Turnips	0.25	0.1	-----	0.1
Turnips, tops	1.0	-----	-----	-----
Walnuts (determined on the nut meats with shell removed)	0.25	-----	0.25	-----
Watercress	2.0	-----	-----	-----
Watermelon	0.5	-----	0.5	-----

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* K+CWHR = kernels plus cobs with husks removed.

Table 4. Summary of Present Mevinphos Food Additive Tolerances

	Tolerances (ppm)
Commodity	United States
Dehydrated Parsley	4.0[1]

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[1] When present as a result of application of mevinphos to the growing crop. However, dehydrated parsley is not presently considered a processed product of fresh parsley and therefore a food additive tolerance is not required for dehydrated parsley.

1. Residue Data

The metabolism of mevinphos in plants and animals is not adequately understood. Available plant metabolism data do not sufficiently describe the metabolism of mevinphos in pea plants because the levels of radioactivity in the initial plant extract, solids, and chloroform and aqueous extracts were not reported and, therefore, the data do not adequately quantify the relative amounts of parent material and metabolites. Residues were not characterized in livestock.

The plant metabolism data indicate that mevinphos is absorbed by plant roots, translocated readily to leaves and growing shoots, and is degraded rapidly. The major residues, identified in pea plants, are the alpha and beta isomers of mevinphos and dimethyl phosphate. Mevinphos acid is a minor metabolite in pea plants and it has been demonstrated that mevinphos acid is converted to desmethyl mevinphos acid. It has been suggested that the end products of mevinphos metabolism are methanol, acetone, and carbon dioxide.

The available animal metabolism data indicate that twelve hours after dosing 57 to 65% of the ^{32}P-residues was excreted in the urine and feces (45 to 50% in urine; 12 to 15% in feces). Only mevinphos hydrolysis products were present.

If the metabolism of mevinphos in ruminants or poultry differs from that in rats, then data on the metabolism of mevinphos in swine will also be required.

Data gaps exist for plant and animal metabolism and storage stability. On receipt of the data requested in these sections of the registration standard, the conclusions stated above regarding the adequacy of established tolerances are subject to change. Furthermore, since the data required for individual commodities are dependent on the metabolism data, the Agency recommends that metabolism data be obtained and submitted prior to any required residue data.

Adequate gas-liquid chromatographic (GLC) and nonspecific cholinesterase inhibition (spectrophotometric and pH change) methods are available for collection of data pertaining to residues of mevinphos in or on plant commodities. At the present time, no tolerances exist for residues of mevinphos alpha and beta isomers in animal commodities, although registered uses exist on crops which may result in residues in or on feed items. The submitted cholinesterase inhibition/pH change method is inadequate for data collection from milk because of unacceptably low (ca. 37%) recovery efficiency. If tolerances for residues of mevinphos in animal commodities are proposed, a validated data collection and enforcement method must be submitted. Also, if the requested data regarding the nature of the residues of mevinphos in plants and animals reveal the occurrence of additional metabolites of concern, additional analytical methods for data collection and enforcement may be required.

The Codex Maximum Residue Limits (MRL) residue definition is expressed as the sum of cis- and trans-mevinphos, and the U.S. Tolerance definition is expressed as residues of mevinphos, alpha and beta isomers. These definitions are equivalent. A decision regarding the potential for compatibility between the permanent Codex MRL and the U.S. tolerances for carrots, potatoes, turnips, green onions, spinach, cabbage, cauliflower, peas, tomatoes, cucumbers, melons (except watermelon), and pears, will not be made until the adequacy of the U. S. tolerances have been ascertained.

There are no established or proposed direct animal treatment uses for mevinphos. Presently, the nature of the residue in animals is not adequately understood, and numerous data gaps exist concerning the magnitude of the residue in feed items of animals. Therefore, the expected dietary intakes for beef and dairy cattle, poultry, and swine were not calculated. Upon receipt of the requested residue data and animal and plant metabolism data, the need for, and the nature of tolerances for mevinphos residues in livestock and poultry will be assessed.

2. Toxicology Data

Mevinphos is a potent cholinesterase inhibitor currently registered for use on 45 crops. There are virtually no acceptable toxicity data to support these registrations. There is a potential for accidental poisoning, with neurologic involvement, of applicators and farmers who are not protected.

The initial Acceptable Daily Intake (ADI) for mevinphos was based on a 2-year dog feeding study. On the basis of plasma and erythrocyte cholinesterase inhibition, the No Observed Effect Level (NOEL) in this study was defined as 0.025 mg/kg/day. A safety factor of 10 was used to calculate the ADI of 0.0025 mg/kg/day. The cholinesterase inhibition Lowest Effect Level (LEL) in this study was defined as 0.075 mg/kg/day. When the Agency reviewed this study in the reregistration review for mevinphos, serious report deficiencies were noted that made the study unacceptable and the Agency found that it was not possible to define the NOEL and LEL doses. The Agency reviewed seven chronic toxicity studies during the mevinphos reregistration review process and all but one of them (a rat teratology study) were found to be unacceptable. Therefore, the Agency concludes that there are insufficient data to establish an ADI or PADI for mevinphos at this time.

IV. REGULATORY POSITION AND RATIONALE

A. REGULATORY POSITIONS AND RATIONALES

1. Special Review

The Agency is not initiating a special review for mevinphos at this time.

Rationale: The Agency is concerned about the significant number of mevinphos poisonings reported in California. However, the Agency's existing data base is insufficient for supporting any further regulatory action at this time. Major data gaps exist in the areas of acute, subchronic, and chronic toxicity, as well as in the areas of oncogenicity, teratogenicity, reproductive effects, mutagenicity, and metabolism. Acute toxicity studies were called in by the Agency under an earlier notice and will be submitted in mid-1988. The Agency also needs further information from the state of California in order to adequately characterize the causes of the reported poisonings in that state. That information has been requested from California. In addition, major data gaps also exist in the environmental fate and residue chemistry data base. A number of data gaps also exist in the ecological effects data base. Therefore, the Agency is calling in all of the data identified as gaps in the Agency's mevinphos data base and is reserving consideration of special review for mevinphos until data become available that more clearly identify the risks posed by mevinphos use.

2. Reentry Requirements

The Agency is establishing a reentry interval of four days (96-hours) for citrus groves, grape vineyards, nectarine and peach orchards; and two days (48-hours) for all other crops treated with mevinphos.

Rationale: Mevinphos is registered for use on a variety of agricultural sites which involve hand labor, and therefore may pose potential health risks to those workers because of potential dermal, inhalation, and ocular exposure when reentering areas treated with this chemical. A relatively high number of fieldworker poisoning incidents have been reported for crops treated with mevinphos. All mevinphos products are currently classified in Toxicity Category I, are rapidly absorbed through the skin[3], and are cholinesterase inhibitors. California has established a 3 or 4 day reentry interval for all crops treated with mevinphos, and Texas and New Jersey have imposed a 2 day reentry interval. Current Federal labeling only requires that fieldworkers not enter treated areas until sprays have dried unless they are wearing protective clothing.

In order to determine the adequacy of the reentry statement on current Federally registered mevinphos products, the Agency, in February 1985, issued a data call-in requiring the registrants of mevinphos products to provide foliar dislodgeable residue data to support appropriate reentry intervals. Those data have been submitted to the Agency, along with proposed reentry intervals. The Agency has reviewed these data and the registrant's proposed reentry intervals and has determined that the data support the proposed reentry intervals of 96 hours (four days) for citrus groves, grape vineyards, nectarine and peach orchards, and 48 hours (two days) for all other crops treated with mevinphos.

3. Restricted Use

The Restricted Use classification for all uses of mevinphos emulsifiable concentrates and liquid concentrates, Psycodid filter fly liquid formulations, and 2 percent dust formulations under FIFRA section 162.31 will remain in effect. In addition, a statement identifying the reasons for the restriction are to appear on the label as specified in Section IV.D of this document. It is the Agency's position that affected products must bear appropriate restricted use labeling in order to remain in compliance with FIFRA.

Rationale: All mevinphos products, whether liquid or dust formulations, have been classified for restricted use based on the acute dermal toxicity to humans and expected toxic residues on wildlife food items and in aquatic habitats. Although there are numerous toxicology and ecological effects data gaps, available data are sufficient to show that these effects are of continuing concern. In order that the public and/or the user be aware of the reasons for the restricted use classification, a statement identifying the reasons for the restriction are to appear on the label as specified in Section IV.D of this document.

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[3] Labels for current Federally registered mevinphos products contain the following precautionary statements: "Poisonous if swallowed, inhaled or absorbed through the skin. Rapidly absorbed through the skin. Repeated inhalation or skin contact may without symptoms, progressively increase susceptibility to mevinphos poisoning."

4. Physical Presence of Certified Applicators

In order for mevinphos products to remain in compliance with FIFRA, product labels must contain language requiring certified applicators to be physically present during application, mixing and loading of the pesticide, and during repair and cleaning of application equipment. Certified applicator labeling statements are specified in Section IV.D of this document.

Rationale: Untrained workers are likely to be unaware of the acute hazards associated with mevinphos. On the other hand, certified applicators are trained in safe methods of using pesticides and should be aware of the hazards associated with the use of mevinphos. Requiring the certified applicator to be physically present during application, mixing and loading of the pesticide, and during repair and cleaning of application equipment will not only ensure closer supervision of untrained workers but will also ensure closer adherence to label requirements. Certified applicators are being required to ensure that persons under their direct supervision who are involved in applying, mixing and loading of the pesticide, and in repairing and cleaning of application equipment, are informed of precautionary statements on the label regarding the use of mevinphos. This requirement will ensure that persons who may come into contact with the pesticide are aware of and comply with the required measures to protect their health.

5. Protective Clothing

In order for products to remain in compliance with FIFRA, product labels must contain language requiring the use of protective clothing for all end-use products containing mevinphos. Protective clothing statements are specified in Section IV.D of this document.

Rationale: The acute toxicity of mevinphos has been documented by the number of reported incidents of applicators and mixer/loaders who have been poisoned by exposure to mevinphos. Poisoning incidence data show that a number of incidents have occurred during application from splashing and spillage during mixing and loading of the pesticide, and during repair and cleaning of application equipment. Poisoning reports from California show that mevinphos was the number one cause of hospitalization and the number two cause of systemic poisonings in that state from 1981 to 1985. Those reports also show that the ratio of poisonings to pounds of pesticide sold in California was higher for mevinphos than for any of the other agricultural chemicals examined.

In addition mevinphos is registered for use on a variety of agricultural sites all of which may involve hand labor, and may pose potential dermal exposure risks to workers. All mevinphos products are currently classified in Toxicity Category I, bear a statement that they are rapidly absorbed through the skin, and are cholinesterase inhibitors.

Although current mevinphos product labels contain protective clothing statements, the Agency does not consider the current language to be adequate. Therefore, in an effort to increase the level of protection afforded to mixer/loaders, applicators, and persons reentering treated fields before and after the spray has dried, the Agency is requiring that all end use mevinphos product labels bear the protective clothing statements specified in Section IV.D of this document.

6. Tolerances and New Uses

The Agency will not grant any tolerances or any new uses for mevinphos until sufficient data are submitted for the Agency to calculate the Theoretical Maximum Residue Contribution (TMRC) for mevinphos and then will not grant any tolerances or significant new food uses[4] until all of the required residue chemistry and toxicology data have been submitted and reviewed.

Rationale: Available residue chemistry and toxicology data for mevinphos are not sufficient for the Agency to calculate the TMRC for mevinphos or to reassess the existing mevinphos tolerances. Plant and animal metabolism data and residue data on various commodities are required. The pertinent toxicology data requirements include: chronic feeding, oncogenicity, mutagenicity, reproduction, teratogenicity, and metabolism (refer to Table A for specific residue chemistry and additional toxicology data requirements). Until these data are submitted and reviewed, the Agency cannot calculate the TMRC for mevinphos or perform a tolerance reassessment.

7. Endangered Species Concerns

The Office of Endangered Species (OES) in the U.S. Fish and Wildlife Service (FWS) has determined that certain uses of mevinphos may jeopardize the continued existence of endangered species or critical habitat of certain endangered species. EPA is developing a program to reduce or eliminate exposure to these species to a point where use does not result in jeopardy, and will issue notice of any necessary labeling revisions when the program is developed.

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[4] "Significant new use" is defined in 44 FR 27934, May 11, 1979. In the case of a new food or feed use, the Agency will generally consider as significant an increase in the Theoretical Maximum Residue Contribution (TMRC) of greater than 1%.

No additional labeling is being required at this time. As explained below, labeling requirements issued in PR Notices 87-4 and 87-5 have been withdrawn pending re-issuance.

Rationale: In May 1987, EPA issued PR Notices 87-4 and 87-5 in response to OES findings that certain pesticides, including mevinphos, jeopardized the continued existence of endangered species. Those PR Notices directed registrants to add labeling to their products which referred users to additional information that, in turn, explained limitations on use of the pesticide within the range of jeopardized endangered species. Subsequent to issuance of these PR Notices, EPA identified a number of significant technical errors and inconsistencies in the information to which users would have been referred. Therefore, on January 26, 1988 the Agency issued PR Notice 88-1 which withdrew PR Notices 87-4 and 87-5 pending development of a more focused program to protect endangered species.

EPA is working to correct these errors prior to requiring labeling to protect endangered species. When that program is fully developed, notice of any labeling necessary to protect endangered species will be issued.

8. Human Flaggers

The Agency is prohibiting the use of human flaggers during aerial application of mevinphos, unless they are in totally enclosed vehicles.

Rationale: The Agency is imposing this requirement to minimize hazard to flaggers since human flaggers face a risk of exposure by direct contact or through drift during aerial application.

9. Nontarget Organisms Labeling

In order to meet the statutory standard for continued registration, the Agency has determined that mevinphos products must bear revised and updated labeling for hazards to nontarget organisms.

Rationale: Available data show that mevinphos is very highly toxic to birds, wild mammals, aquatic organisms, and honey bees. Precautionary label statements relative to the potential risks posed by mevinphos to nontarget organisms will provide useful information to promote practices to limit such exposure of nontarget species to this pesticide.

10. Spray Drift Data Requirements

Droplet Spectrum and Spray Drift Field Evaluation tests are required. The droplet spectrum study must be performed to reflect the commonly-used nozzle and other equipment types which are used in the application of mevinphos. The spray drift field evaluation must be performed to reflect the commonly-used application equipment, use patterns, and typical locations of use (including different weather factors).

Rationale: The Agency is concerned about hazards to humans and nontarget fish and wildlife, and domestic animals caused by drift from aerial and mist-blower applications of mevinphos. These tests are required because of the toxic nature of mevinphos and because the methods used to apply mevinphos (mist-blower and aerial) may lead to exposure of bystanders and wildlife. These tests will indicate the extent of possible drift of this chemical from normal applications and the data from these tests will enable the Agency to evaluate the potential for drift.

11. Acceleration of Dates When Mevinphos Products Must Bear Amended Labeling Required By This Standard

The Agency is accelerating the dates for when mevinphos products must bear the amended labeling required by this Standard.

Rationale: The Agency usually allows registrants one year from the issue date of a registration standard before requiring that their products bear the amended labeling required by that standard. However, because pesticide poisoning reports from California show mevinphos to be among the top five pesticides in terms of frequency of occupational pesticide poisoning in California during the period from 1981 to 1985; the extensiveness of the gaps in mevinphos' data base, particularly with regard to its toxicity; and the fact that mevinphos is considered to be in Toxicity Category I, the Agency is accelerating the dates for when mevinphos products must bear amended labeling required by this Standard. The Agency is taking this action in order to protect applicators and fieldworkers as soon as possible. The accelerated dates would have the amended labeling on mevinphos products for the 1989 growing season. The dates when mevinphos products must bear the amended labeling are set forth in Section IV.D of this Standard.

12. National Pesticide Telecommunications Network Telephone Number

The Agency is requiring the addition of the telephone number of the National Pesticide Telecommunications Network to the labels of all end-use mevinphos products.

Rationale: The telephone number is included in order to provide an additional source of first aid information in the event of an accident involving exposure to this chemical.

13. Data Identified for Immediate Review

The Agency has identified certain data that will receive immediate review when submitted.

Rationale: Certain data are essential to the Agency's assessment of this pesticide and its uses and/or may trigger the need for further studies which should be initiated as soon as possible. The following studies have been identified to receive priority review as soon as they are received by the Agency:

Section 158.125 - Residue Chemistry

171-4 - Nature of Residues (Metabolism [Plants and Livestock])
171-4 - Residue Storage Stability
171-4 - Magnitude of the Residues in Plants

Section 158.130 - Environmental Fate

161-1 - Hydrolysis
161-2 - Photodegradation (in water)
161-3 - Photodegradation (in soil)
161-4 - Photodegradation (in air

163-1 - Leaching and Adsorption/ Desorption
163-2 - Volatility (Lab)

164-1 - Field Dissipation (Soil)
164-2 - Aquatic Dissipation (sediment)

165-1 - Confined Rotational Crop
165-2 - Field Rotational Crop
165-3 - Irrigated Crops

165-4 - Fish Accumulation (Lab)
165-5 - Aquatic Nontarget Organisms Accumulation

Section 158.135 - Toxicology

81-1 - Acute Oral
81-2 - Acute Dermal
81-3 - Acute Inhalation
81-4 - Eye Irritation
81-5 - Dermal Irritation
81-6 - Dermal Sensitization
81-7 - Acute Delayed Neurotoxicity (Hen)

Special-Testing Acute Dermal (to define lethality, toxicity, and ChE NOELs)

82-2 - Subchronic 21-day Dermal
82-4 - Subchronic 90-day Inhalation
83-2 - Oncogenicity (Rat and Mouse)
83-3 - Teratogenicity (Rabbit)
83-4 - Reproduction

85-1 - General Metabolism

Section 158.142 - Spray Drift

201-1 - Droplet Size Spectrum

202-1 - Drift Field Evaluation

Section 158.145 - Wildlife and Aquatic Organisms

71-3 - Wild Mammal Toxicity
71-4 - Avian Reproduction

72-1 - Acute Toxicity to Freshwater Fish (using a typical end-use product)

72-2 - Acute Toxicity to Freshwater Invertebrate (using a typical end-use product)

72-3 - Acute Toxicity to Estuarine and Marine Organisms (Fish and Shrimp)

72-4 - Fish Early Life Stage and Invertebrate Life Cycle

72-6 - Aquatic Organism Accumulation

70-1 - Special Test (Terrestrial Residue Monitoring)

14. Amending Certain Tolerance Commodity Entries to Reflect Appropriate Commodity Definitions

The Agency proposes to: (i) amend the commodity entry "beets, garden (including tops)" to reflect the appropriate commodity definition "beet greens"; (ii) amend the commodity entry "melons (including cantaloupes, honeydew melon, and muskmelon, determined on the edible portion with rind removed)" to reflect the appropriate commodity definition "melons (including cantaloupes, honeydew melon, and muskmelon)"; and (iii) amend the entry "plums" to reflect the appropriate commodity definition "plums (fresh prunes)".

Rationale: The current tolerance commodity entries for beets, melons, and plums do not reflect the commodity definitions currently established by the Agency. The amendments proposed above would have those commodity entries reflect the appropriate commodity definition

15. Continuation of Current Registrations

While the required data are being developed, currently registered manufacturing-use products (MPs) and end-use products (EPs) containing mevinphos may be sold, distributed, formulated and used subject to the terms and conditions specified in this Standard. Registrants must provide or agree to develop and provide additional data, as specified in the Data Appendices in order to maintain existing registrations.

Rationale: Under FIFRA, the Agency does not normally cancel or withhold registration because data are missing or are inadequate [see FIFRA section 3(c)(2)(B) and 3(c)(7)]. Issuance of this Standard provides a mechanism for identifying data needs. These data will be reviewed and evaluated, after which the Agency will determine if additional regulatory changes are necessary.

B. Criteria for Registration

To be registered or reregistered under this Standard, manufacturing-use and end-use products must contain mevinphos as the sole active ingredient, bear required labeling, and conform to the product composition, acute toxicity limits, and use pattern requirements listed in Section C below.

C. Acceptable Ranges and Limits

1. Product Composition Standard

To conform to this Standard, manufacturing-use and end-use products must contain mevinphos as the sole active ingredient. Each formulation proposed for registration must be fully described with an appropriate certification of limits, stating maximum and minimum amounts of the active and intentionally added inert ingredients present in the product, as well as impurities found at levels greater than 0.1 percent.

2. Acute Toxicity Limits

The Agency will consider registration of technical grade, manufacturing-use or end-use products containing mevinphos, provided the product is supported by appropriate acute toxicity data and the labeling for the product bears appropriate precautionary statements for the toxicity category in which the product is placed. Mevinphos manufacturing-use and end-use products are currently in Toxicity Category I and the appropriate signal word is DANGER.

3. Use Patterns

To be registered under this Standard, manufacturing-use products must be labeled for formulation into other manufacturing-use products or into end-use products bearing federally registered uses. The EPA Index to Pesticide Chemicals (Appendix III) lists all federally registered uses of mevinphos, as well as approved maximum application rates and frequencies.

The use patterns currently registered for mevinphos are as follows:

Terrestrial - Food Crop: alfalfa; anise[5]; apple; artichoke; beans; beets (including tops); Bermudagrass (seed crop)[5]; birdsfoot trefoil[5]; broccoli; broccoli raab; Brussels sprouts; cabbage; carrot; cauliflower; celery; cherry (sour); Chinese broccoli (gai lon)[5]; Chinese cabbage (including napa or napa cabbage, bok choy, pak choi, gai choy, and mizunal)[5]; clover; collards; corn; cucumber; eggplant; fennel; grapefruit; grapes; kale; lemon; lettuce; melons (including cantaloupes, honeydew melons, muskmelons, and watermelons); mint; mustard greens; okra; onions (including green onions); orange; peach; pear; peppers; plum; potato; raspberry; red chicory (tops) radicchio[5]; sesame (seed crop)[5]; sorghum; spinach; squash (summer); strawberry; tomato; turnips (including tops); walnut.

Terrestrial - Nonfood Crop: ornamental flowering plants (field grown)[5].

Greenhouse - Food Crop: lettuce.

Aquatic - Food Crop: watercress[5].

Aquatic - Nonfood Crop: sewage disposal plants.

D. Required Labeling

All products must bear appropriate labeling as specified in 40 CFR 162.10, PR Notices 83-2, 83-3, and below. Appendix II contains further information on label requirements.

Pesticide products containing mevinphos as an active ingredient may not be released for shipment by the registrant after September 1, 1988 unless the product bears amended labeling that complies with the requirements of this Standard. Five (5) copies of the labeling, revised in accordance with this Standard, must be submitted prior to release for shipment.

Pesticide products containing mevinphos as an active ingredient may not be distributed, sold, offered for sale, held for sale, shipped, delivered for shipment, or received and (having been so received) delivered or offered to be delivered by any person after September 1, 1989 unless the product bears amended labeling, five copies of which have been submitted to the Agency, that complies with the requirements of this Standard.

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[5] This use is currently registered as a Special Local Need registration under 24(c) of FIFRA.

In addition to the above labeling requirements, the following information must appear on the labeling of all manufacturing-use and end-use products.

Ingredient Statement

The ingredient statement for all mevinphos products must list the active ingredient as:

ACTIVE INGREDIENT:
Mevinphos (2-Carbomethoxy-1-methylvinyl dimethyl phosphate, alpha isomer). . ___%*
Related Compounds . . . . ___%*

*Equivalent to 50%/w MEVINPHOS Insecticide

1. Manufacturing-Use Product Labeling

a. Use Pattern

All products must state that they are intended for formulation into other manufacturing-use or end-use products for acceptable use patterns. Labeling must specify sites, which are listed in Use Patterns, Appendix III. However, no use may be included on the label where the registrant fails to agree to comply with the data requirements in Table A for that use pattern.

b. Environmental Hazards

The following revised environmental hazard statement must appear on all labels:

> "This pesticide is toxic to fish and wildlife. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or public waters unless this product is specifically identified and addressed in an NPDES permit. Do not discharge effluent containing this product to sewer systems without previously notifying the sewage treatment plant authority. For guidance, contact your State Water Board or Regional Office of the Environmental Protection Agency."

c. Personal Protective Equipment and Work Safety

The following personal protective equipment and work safety statements must appear on all labels:

> "USE ONLY WHEN WEARING THE FOLLOWING PERSONAL PROTECTIVE EQUIPMENT DURING MIXING/LOADING, REPAIR AND CLEANING OF MIXING/LOADING EQUIPMENT, OR DISPOSAL OF THE PESTICIDE: Protective suit of one or two pieces covering all parts of the body except head, hands, and feet; NIOSH or MSHA approved respiratory protection device; chemical-resistant gloves; chemical-resistant shoes (or chemical-resistant shoe coverings or chemical-resistant boots). In addition, mixer/loaders must wear a chemical-resistant apron. During equipment repair and cleaning, the protective suit and the respirator need not be worn.
>
> IMPORTANT: If pesticide comes in contact with skin, wash off with soap and water and contact a physician immediately. Always wash hands, face, and arms with soap and water before smoking, eating, drinking, or toileting.
>
> AFTER WORK: Before removing gloves, wash them with soap and water. Take off all work clothes and shoes. Shower using soap and water. Wear only clean clothes when leaving job -- do not wear contaminated clothing. Personal and protective clothing worn during work must be laundered separately from household articles. Store protective clothing separately from personal clothing. Clean or launder protective clothing after each use. Protective clothing and equipment that becomes heavily contaminated or drenched must be destroyed according to State and local regulations. HEAVILY CONTAMINATED OR DRENCHED CLOTHING CANNOT BE ADEQUATELY DECONTAMINATED."

2. End-Use Product Labeling

a. Restricted Use Statement

The following statement must appear on the front panel of all products:

"RESTRICTED USE PESTICIDE

Due to Very High Acute Toxicity to Humans
and
Residue Effects on Avian, Mammalian and Aquatic Species

For retail sale to and use only by certified applicators or persons under their direct supervision and only for those uses covered by the certified applicator's certification. Direct supervision for this product is defined as the certified applicator being physically present during application, mixing, loading, repair and cleaning of application equipment. Certified applicators must also ensure that all persons involved in these activities are informed of the precautionary statements."

b. Environmental Hazards

One of the following environmental hazard statements must appear on the label of all products which permit outdoor uses:

Terrestrial Food and Nonfood Uses

"This pesticide is toxic to fish and wildlife. Drift and runoff may be hazardous to aquatic organisms in neighboring areas. Do not apply directly to water or wetlands (swamps, bogs, marshes, and potholes). Do not contaminate water when disposing of equipment washwaters."

Aquatic Food Uses (watercress)

"This pesticide is toxic to fish and wildlife. Effluent may be hazardous to aquatic organisms. Do not contaminate water when disposing of equipment washwaters."

c. Personal Protective Equipment and Work Safety

The following personal protective equipment and work safety statements must appear on the labeling of all products:

"USE ONLY WHEN WEARING THE FOLLOWING PERSONAL PROTECTIVE EQUIPMENT DURING MIXING/LOADING, APPLICATION, REPAIR AND CLEANING OF MIXING, LOADING, AND APPLICATION EQUIPMENT, AND DISPOSAL OF THE PESTICIDE: protective suit of one or two pieces that covers all parts of the body except head, hands, and feet; chemical-resistant gloves; chemical-resistant shoes (or chemical-resistant shoe coverings or chemical-resistant boots); goggles or face shield; hood or wide brimmed hat; NIOSH or MSHA approved respiratory protection device.

IF MIXING/LOADING IS PERFORMED USING A CLOSED SYSTEM, THE FOLLOWING PROTECTIVE CLOTHING AND EQUIPMENT MAY BE WORN AS AN ALTERNATIVE: Long-sleeve shirt; long-legged pants; chemical-resistant gloves; chemical-resistant apron; shoes and socks. Goggles or face shield must be worn when the system is under pressure. All other protective clothing and equipment required for use with open systems must be available nearby.

IF APPLICATION IS PERFORMED USING AN ENCLOSED CAB OR COCKPIT, THE FOLLOWING PROTECTIVE CLOTHING AND EQUIPMENT MAY BE WORN AS AN ALTERNATIVE: Long-sleeve shirt and long-legged pants; shoes and socks. Chemical-resistant gloves must be available in the cab or cockpit and must be worn during entry to and exit from the application vehicle. All other protective clothing and equipment required for use during application must be available in the cab and must be worn when exiting the cab into treated area. When used for this purpose, contaminated clothing may not be brought back into the cab unless in an enclosure such as a plastic bag. REMEMBER - THIS CLOTHING IS INADEQUATE TO PROTECT YOU DURING REPAIR AND CLEANING OF APPLICATION EQUIPMENT AND EARLY REENTRY TO TREATED AREAS! REFER TO PROTECTIVE CLOTHING AND EQUIPMENT REQUIREMENTS ABOVE.

IMPORTANT! If pesticide comes in contact with skin, wash off with soap and water and contact a physician immediately. Always wash hands, face, and arms with soap and water before smoking, eating, drinking, or toileting.

AFTER WORK: Before removing gloves, wash them with soap and water. Take off all work clothes and shoes. Shower using soap and water. Wear only clean clothes when leaving job -- do not wear contaminated clothing. Personal and protective clothing worn during work must be stored and laundered separately from household articles. Clean or launder protective clothing after each use. Respirators must be cleaned and filters replaced according to instructions included with the respirators. Protective clothing and protective equipment that be comes heavily contaminated or drenched with mevinphos must be destroyed according to State and local regulations. HEAVILY CONTAMINATED OR DRENCHED CLOTHING CANNOT BE ADEQUATELY DECONTAMINATED.

The National Pesticide Telecommunication Network is available for recommendations regarding poisoning management, emergency treatment, and other information regarding the toxicity of mevinphos. The toll free number for the National Pesticide Telecommunication Network is 1-800-858-7378.

IF HANDLED INDOORS provide mechanical exhaust ventilation. Keep all unprotected persons, children, livestock, and pets away from treated area or where there is danger of drift. Do not rub eyes or mouth with hands. If you feel sick in any way, STOP work and get help right away, see the First Aid (Practical Treatment) section of this label."

d. Bee Precautions

The following bee precautionary statement must appear on the label of all products:

"This product is highly toxic to bees exposed to direct treatment on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds while bees are actively visiting the treatment area."

e. Reentry

The following reentry statements must appear on the labeling of all products except aquatic non-food use products:

Reentry

"Reentry into treated citrus groves, grape vineyards, and nectarine and peach orchards is prohibited for 96 hours (4 days) after the end of application, unless the protective clothing specified on this label for early reentry is worn. Reentry into all other treated areas is prohibited for 48 hours (2 days) after the end of application, unless the protective clothing specified on this label for early reentry is worn.

FOR EARLY REENTRY INTO TREATED AREAS BEFORE SPRAYS HAVE DRIED, wear all protective clothing specified on this label for an applicator.

FOR EARLY REENTRY INTO TREATED AREAS AFTER SPRAYS HAVE DRIED, wear protective suit of one or two pieces covering all parts of the body except head, hands, and feet; chemical-resistant gloves; chemical-resistant shoes (or chemical-resistant shoe coverings or chemical-resistant boots).

Written or oral warnings must be given to workers who are expected to be in treated areas or in an area about to be treated with this product. (Indicate specific oral warnings which inform workers of areas or fields that may not be entered without specific protective clothing, period of time field must be vacated and appropriate actions to take in case of accidental exposure.) When oral warnings are given, warnings shall be given in a language customarily understood by workers. Oral warnings must be given if there is reason to believe that written warnings cannot be understood by workers. Written warnings must include the following information: **DANGER:** Area treated with MEVINPHOS on (Date) ______________________________. **Do not enter without appropriate protective clothing until** (insert date/time reflecting end of reentry interval set forth on this label). In case of accidental exposure see STATEMENTS OF PRACTICAL TREATMENT found on the MEVINPHOS product label."

f. Human Flaggers

The following statement must appear on the labeling of all products, except aquatic non-food use products, which permit aerial application:

"HUMAN FLAGGERS ARE PROHIBITED during aerial application of this product unless in totally enclosed vehicles."

g. Storage and Disposal

All products must have the appropriate storage and disposal statements on the label. Refer to Appendix II for the appropriate statements.

V. PRODUCTS SUBJECT TO THIS STANDARD

All products containing one or more of the pesticides identified in Section II.A. are subject to certain requirements for data submission or changes in composition, labeling or packaging of the product. The applicable requirements depend on whether the product is a manufacturing or end use product and whether the pesticide is the sole active ingredient or one of multiple active ingredients.

Products are subject to this Registration Standard as follows:

A. Manufacturing-use products containing this pesticide as the sole active ingredient are subject to:

1. The restrictions (if any) upon use, composition, or packaging listed in Section IV, if they pertain to the manufacturing-use product.

2. The data requirements listed in Tables A and B[6]

3. The labeling requirements specified for manufacturing-use products in Section IV.

4. Administrative requirements (application forms, Confidential Statement of Formula, data compensation provisions) associated with reregistration.

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[6] Data requirements are listed in the three Tables in Appendix I of this Registration Standard. The Guide to Tables in that Appendix explains how to read the Tables.

Table A lists generic data requirements applicable to all products containing the pesticide subject to this Registration Standard. Table B lists product-specific data applicable to manufacturing use products. The data in Tables A and B need not be submitted by a producer who is eligible for the formulator's exemption for that active ingredient.

Table C lists product-specific data applicable to end use products. The Agency has decided that, in most cases, it will not require the submission of product-specific data for end use products at this time. Therefore most Registration Standards do not contain a Table C.

B. Manufacturing-use products containing this pesticide as one of multiple active ingredients are subject to:

1. The restrictions (if any) upon use, composition, or packaging listed in Section IV, if they pertain to the manufacturing-use product.

2. The labeling requirements specified for manufacturing-use products in Section IV.

3. The data requirements listed in Table A.

4. Administrative requirements (application forms, Confidential Statement of Formula, data compensation provisions) associated with reregistration.

C. End-use products containing this pesticide as the sole active ingredient are subject to:

1. The restrictions (if any) upon use, composition, or packaging listed in Section IV if they pertain to the end-use product.

2. If eligible for the formulator's exemption[7], the data requirements listed in Table C (if included).

3. If not eligible for the formulator's exemption, the data requirements listed in Table A and the data requirements listed in Table C (if included).

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[7] If you purchase from another producer and use as the source of your active ingredient only EPA-registered products, you are eligible for the formulator's exemption for generic data concerning that active ingredient (Table A) and product-specific data for the registered manufacturing use product you purchase (Table B)

Two circumstances nullify this exemption:

1) If you change sources of active ingredient to an unregistered product, formulate your own active ingredient, or acquire your active ingredient from a firm with ownership in common with yours, you individually lose the exemption and become subject to the data requirements in Table A.

2) If no producer subject to the generic data requirements in Table A agrees to submit the required data, all end use producers lose the exemption, and become subject to those data requirements.

4. The labeling requirements specified for end-use products in Section IV.

5. Administrative requirements (application forms, Confidential Statement of Formula, data compensation provisions) associated with reregistration.

D. End-use products containing this pesticide as one of multiple active ingredients are subject to:

1. The restrictions (if any) upon use, composition, or packaging listed in Section IV if they pertain to the end-use product.

2. If not eligible for the formulator's exemption, the data requirements listed in Table A and Table C (if included).

3. If eligible for the formulator's exemption, the data requirements listed in Table C (if included).

4. The labeling requirements specified for end-use products in Section IV.

5. Administrative requirements (application forms, Confidential Statement of Formula, data compensation provisions) associated with reregistration.

VI. REQUIREMENT FOR SUBMISSION OF GENERIC DATA

This portion of the Registration Standard is a notice issued under the authority of FIFRA sec. 3(c)(2)(B). It refers to the data listed in Table A, which are required to be submitted by registrants to maintain in effect the registration of products containing this active ingredient.[8]

A. What are generic data?

Generic data pertain to the properties or effects of a particular active ingredient. Such data are relevant to an evaluation of all products containing that active ingredient regardless of whether the product contains other ingredients (unless the product bears labeling that would make the data requirement inapplicable).

Generic data may also be data on a "typical formulation" of a product. "Typical formulation" testing is often required for ecological effects studies and applies to all products having that formulation type. These are classed as generic data, and are contained in Table A.

B. Who must submit generic data?

All current registrants are responsible for submitting generic data in response to a data request under FIFRA sec. 3(c)(2)(B) (DCI Notice). EPA has decided, however, not to require a registrant who qualifies for the formulator's exemption (FIFRA sec. 3(c)(2)(D) and 40 CFR sec. 152.85) to submit generic data in response to a DCI notice if the registrant who supplies the active ingredient in his product is complying with the data request.

If you are granted a generic data exemption, you rely on the efforts of other persons to provide the Agency with the required data. If the registrants who have committed to generate and submit the required data fail to take appropriate steps to meet the requirements or are no longer in compliance with this data requirements notice, the Agency will consider that both they and you are not in compliance and will normally initiate proceedings to suspend the registrations of both your product(s) and their product(s) unless you commit to submit and submit the required data in the specified timeframe. In such cases, the Agency generally will not grant a time extension for submitting the data.

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[8] Registrations granted after issuance of this Standard will be conditioned upon submission or citation of the data listed in this Registration Standard.

If you are not now eligible for a formulator's exemption, you may qualify for one if you change your source of supply to a registered source that does not share ownership in common with your firm. If you choose to change sources of supply, the Confidential Statement of Formula must identify the new source(s) and you must submit a Formulator's Exemption Statement form.

If you apply for a new registration for products containing this active ingredient after the issuance of this Registration Standard, you will be required to submit or cite generic data relevant to the uses of your product if, at the time the application is submitted, the data have been submitted to the Agency by current registrants. If the required data have not yet been submitted, any new registration will be conditioned upon the new registrant's submission or citation of the required data not later than the date upon which current registrants of similar products are required to provide such data. See FIFRA sec. 3(c)(7)(A). If you thereafter fail to comply with the condition of that registration to provide data, the registration may be cancelled (FIFRA sec. 6(e).

C. What generic data must be submitted?

You may determine which generic data you must submit by consulting Table A. That table lists the generic data needed to evaluate current uses of all products containing this active ingredient, the uses for which such data are required, and the dates by which the data must be submitted to the Agency.

D. How to comply with DCI requirements.

Within 90 days of your receipt of this Registration Standard, you must submit to EPA a completed copy of the form entitled "FIFRA Section 3(c)(2)(B) Summary Sheet" (EPA Form 8580-1, enclosed) for each of your products. On that form you must state which of the following six methods you will use to comply with the DCI requirements.

1. You will submit the data yourself.

2. You have entered into an agreement with one or more registrants to jointly develop (or share in the cost of developing) the data, but will not be submitting the data yourself. If you use this method, you must state who will submit the data on which you will rely. You must also provide EPA with documentary evidence that an agreement has been formed which allows you to rely upon the data to be submitted. Such evidence may be: (1) your letter offering to join in an agreement and the other registrant's acceptance of your offer, (2) a written statement by the parties that an agreement exists, or (3) a written statement by the person who will be submitting the data

that you may rely upon its submission. The Agency will also require adequate assurance that the person whom you state will provide the data is taking appropriate steps to secure it. The agreement to produce the data need not specify all of the terms of the final arrangement between the parties or a mechanism to resolve the terms.

If you and other registrants together are generating or submitting requested data as a task force or consortium, a representative of the group should request a Joint Data Submitter Number from the Registration Support and Emergency Response Branch, Registration Division. The request must include the following information:

a. A list of the members of the consortium;
b. The name and address of the designated representative of the consortium, with whom EPA will correspond concerning the data;
c. Identity of the Registration Standard containing the data requirement;
d. A list of the products affected (from all members of the consortium); and
e. Identification of the specific data that the consortium will be generating or submitting.

The Agency will assign a number to the consortium, which should be used on all data submissions by the consortium.

3. You have attempted to enter into an agreement to jointly develop data, but no other registrant has accepted your offer. You request that EPA not suspend your registration for non-compliance with the DCI. EPA has determined that, as a general policy, it will not suspend the registration of a product when the registrant has in good faith sought and continues to seek to enter into a data development/cost sharing program, but the other registrants developing the data have refused to accept its offer. [If your offer is accepted, you may qualify for Option 2 above by entering into an agreement to supply the data.]

In order to qualify for this method, you must:

1. File with EPA a completed "Certification of Attempt to Enter into an Agreement with other Registrants for Development of Data" (EPA Form 8580-6, enclosed).

2. Provide us with a copy of your offer to the other registrant and proof of the other registrant's receipt of your offer (such as a certified mail receipt). Your offer must, at a minimum, contain the following language or its equivalent:

> [Your company name] offers to share in the burden of producing the data required pursuant to FIFRA sec.

> 3(c)(2)(B) in the [name of active ingredient] Registration Standard upon terms to be agreed or failing agreement to be bound by binding arbitration as provided by FIFRA section 3(c)(2)(B)(iii).

The remainder of your offer may not in any way attempt to limit this commitment. If the other registrant to whom your offer is made does not accept your offer, and if the other registrant informs us on a DCI Summary Sheet that he will develop and submit the data required under the DCI, then you may qualify for this option. In order for you to avoid suspension under this method, you may not later withdraw or limit offer to share in the burden of developing the data.

In addition, the other registrant must fulfill its commitment to develop and submit the data as required by this Notice in a timely manner. If the other registrant fails to develop the data or for some other reason would be subject to suspension, your registration as well as that of the other registrant will normally be subject to initiation of suspension proceedings, unless you commit to submit and submit the required data in the specified timeframe. In such cases, the Agency generally will not grant a time extension for submitting the data.

4. You request a waiver of the data requirement. If you believe that a data requirement does not (or should not) apply to your product or its uses, you must provide EPA with a statement of the reasons why you believe this is so. Your statement must address the specific composition or use factors that lead you to believe that a requirement does not apply. Since the Agency has carefully considered the composition and uses of pesticide products in determining that a data requirement applies, EPA does not anticipate that many waivers will be granted. A request for waiver does not extend the timeframes for developing required data, and if your waiver request is denied your registration may be suspended if you fail to submit the data.

5. You request that EPA amend your registration by deleting the uses for which the data are needed. You are not required to submit data for uses which are no longer on your label.

6. You request voluntary cancellation of the registration of your product(s) for which the data are needed.

E. Testing Protocols, Standards for Conducting Acceptable Tests, Guidance on Evaluating and Reporting Data.

All studies required under this Notice must be conducted in accordance with test standards outlined in the

Pesticide Assessment Guidelines, unless other protocol or standards are approved for use by the Agency in writing.

As noted herein, these EPA Guidelines, which are referenced in the Data Tables, are available from the National Technical Information Service (NTIS), Attn: Order Desk, 5385 Port Royal Road, Springfield, VA 22161 (tel: 703-487-4650).

Protocols approved by the Organization for Economic Cooperation and Development (OECD) are also acceptable if the OECD-recommended test standards conform to those specified in the Pesticide Data Requirements regulation (Part 158.70). Please note, however, that certain OECD standards (such as test duration, selection of test species, and degradate identification which are environmental fate requirements) are less restrictive than those in the EPA Assessment Guidelines listed above. When using the OECD protocols, they should be modified as appropriate so that the data generated by the study will satisfy the requirements of Part 158. Normally, the Agency will not extend deadlines for complying with data requirements when the studies were not conducted in accord with acceptable standards. The OECD protocols are available from OECD, 1750 Pennsylvania Avenue, N.W., Washington, D.C. 20006.

F. Procedures for requesting a change in testing protocol.

If you will generate the required data and plan to use test procedures which deviate from EPA's Pesticide Assessment Guidelines or the Reports of Expert Groups to the Chemicals Group, Organization for Economic Cooperation and Development (OECD) Chemicals Testing Programme, you must submit for EPA approval the protocols you propose to use.

You should submit your protocols before beginning testing, because the Agency will not ordinarily accept as sufficient studies using unapproved protocols. A request for protocol approval will not extend the timeframe for submission of the data, nor will extensions generally be given to conduct studies due to submittal of inappropriate protocols.

G. Procedures for requesting extensions of time.

If you think that you will need more time to generate the data then is allowed by EPA's schedule, you may submit a request for an extension of time. Any request for a time extension which is made as an initial response to a section 3(c)(2)(B) request notice must be submitted in writing to the Product Manager listed at the end of this section and must be made by the 90-day deadline for response. Once dates have been committed to and EPA has accepted these commitments, any subsequent requests for a time extension must be submitted in writing to the Office of Compliance Monitoring at the address given in Section IX.E.

EPA will view failure to request an extension before the data submission response deadline as a waiver of any future claim that there was insufficient time to submit the data. While EPA considers your request, you must strive to meet the deadline for submitting the data.

The extension request should state the reasons why you believe that an extension is necessary and the steps you have taken to meet the testing deadline. Time extensions normally will not be granted due to problems with laboratory capacity or adequacy of funding, since the Agency believes that with proper planning these can be overcome.

A request for an extension does not extend the timeframe for submission of the data. If EPA denies your request for a time extension and you do not submit the data as requested, EPA may begin proceedings to suspend the registrations of your products.

H. PR Notice 86-5 and Any Other Requirements Referenced or Included Within this Notice.

All data submitted in response to this Notice must comply with EPA requirements regarding the reporting of data, including the manner of reporting, the completeness of results, and the adequacy of any required supporting (or raw) data, including, but not limited to, requirements referenced or included in this Notice or contained in PR Notice 86-5 (issued July 29, 1986).

I. Existing stocks provision upon suspension or cancellation.

The Agency has determined that if a registration is suspended for failure to respond to a DCI request under FIFRA sec. 3(c)(2)(B), an existing stocks provision is not consistent with the Act. Accordingly, the Agency does not anticipate granting permission to sell or distribute existing stocks of suspended product except in rare circumstances. If you believe that your product will be suspended or cancelled and that an existing stocks provision should be granted, you have the burden of clearly demonstrating to EPA that granting such permission would be consistent with the Act. The following information must be included in any request for an existing stocks provision:

1. Explanation of why an existing stocks provision is necessary, including a statement of the quantity of existing stocks and your estimate of the time required for their sale or distribution; and

2. Demonstration that such a provision would be consistent with the provisions of FIFRA.

Registrants are reminded that FIFRA sec. 6(a)(2) requires them to submit factual information concerning possible unreasonable adverse effects of a pesticide at any time that they become aware of such information. Registrants should notify the Agency of any information, including interim or preliminary results of studies, if those results suggest possible adverse effects on man or the environment. This requirement continues as long as the products are registered by the Agency.

VII. REQUIREMENT FOR SUBMISSION OF PRODUCT-SPECIFIC DATA

Under its DCI authority, EPA has determined that certain product-specific data are required to maintain your registrations in effect. Product-specific data are derived from testing using a specific formulated product, and, unlike generic data, generally support only the registration of that product. All such data must be submitted by the dates specified in this Registration Standard.

If you have a manufacturing-use product, these data are listed in Table B. If you have an end-use product, the data are listed in Table C. As noted earlier, the Agency has decided that it will not routinely require product-specific data for end-use products at this time. Therefore, Table C may not be contained in this Registration Standard; if there is no Table C, you are not required to submit the data at this time.

In order to comply with the product specific data requirements, you must follow the same procedures as for generic data. See Section VI.D, E, F, and G. You should note, however, that product chemistry data are required for every product, and the only acceptable responses are options VI.D.1. (submit data) or VI.D.6. (cancellation of registration).

Failure to comply with the product-specific data requirements for your products will result in suspension of the product's registration.

VIII. REQUIREMENT FOR SUBMISSION OF REVISED LABELS

FIFRA requires each product to be labeled with accurate, complete and sufficient instructions and precautions, reflecting the Agency's assessment of the data supporting the product and its uses. General labeling requirements are set out in 40 CFR 162.10 (see Appendix II - LABELING and SUMMARY). In addition, labeling requirements specific to products containing this pesticide are specified in Section IV.D of this Registration Standard. Applications submitted in response to this notice must include draft labeling for Agency review.

If you fail to submit revised labeling as required, which complies with 40 CFR 162.10 and the specific instructions in Section IV.D., EPA may seek to cancel or suspend the registration of your product under FIFRA sec. 6.

IX. INSTRUCTIONS FOR SUBMISSION

A. Manufacturing-Use Products (MUPs) containing the subject pesticide as sole active ingredient.

1. Within 90 days from receipt of this document, you must submit to the Product Manager in the Registration Division for each product subject to this Registration Standard:

   a. The "FIFRA Section 3(c)(2)(B) Summary Sheet" (EPA Form 8580-1), with appropriate attachments.[9]

   b. Confidential Statement of Formula (EPA Form 8570-4)

   c. Formulator's Exemption Statement (EPA Form 8570-27), if applicable.

   d. Evidence of compliance with data compensation requirements of FIFRA sec. 3(c)(1)(D). Refer to 40 CFR 152.80 - 152.99.

2. By September 1, 1988, you must submit to the Product Manager, five copies of labeling, as specified in Chapter IV.D. Required Labeling, including the container label and any associated supplemental labeling. Labeling should be either typewritten text on 8-1/2 x 11 inch paper or a mockup of the labeling suitable for storage in 8-1/2 x 11 files. the draft label must indicate the intended colors of the final label, clear indication of the front panel of the label, and the intended type sizes of the text.

3. Within 9 months from receipt of this document you must submit to the Product Manager:

   a. Application for Pesticide Registration/Amendment (EPA Form 8570-1).

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[9] If on the Summary Sheet, you commit to develop the data, present arguments that a data requirement is not applicable or should be waived, or submit protocols or modified protocols for Agency review, you must submit a copy of the Summary Sheet (and any supporting information) to the Office of Compliance Monitoring, which will be monitoring the data generated in response to this notice. This submission is in addition to responding to the Product Manager, and should be submitted to the Office of Compliance Monitoring at the address given at the end of this section. (Actual studies are not to be submitted to the Office of Compliance Monitoring.)

b. Two copies of any required product-specific data (see Table B).

c. Product Specific Data Report (EPA Form 8580-4).

4. Within the times set forth in Table A, you must submit to the Registration Division all generic data, unless you are eligible for the formulator's exemption. If for any reason any test is delayed or aborted so that the schedule cannot be met, immediately notify the Product Manager and the Office of Compliance Monitoring of the problem, the reasons for the problem, and your proposed course of action.

B. Manufacturing-Use products containing the subject pesticide in combination with other active ingredients.

1. Within 90 days from receipt of this document, you must submit to the Product Manager in the Registration Division:

a. FIFRA sec. 3(c)(2)(B) Summary Sheet, with appropriate attachments^x (EPA Form 8580-1).

b. Confidential Statement of Formula (EPA Form 8570-4).

c. Formulator's Exemption Statement (EPA Form 8570-27), if applicable.

2. By September 1, 1988, you must submit to the Product Manager, five copies of labeling, as specified in Chapter IV.D. Required labeling, including the container label and any associated supplemental labeling. Labeling should be either typewritten text on 8-1/2 x 11 inch paper or a mockup of the labeling suitable for storage in 8-1/2 x 11 files. The draft label must indicate the intended colors of the final label, clear indication of the front panel of the label, and the intended type sizes of the text.

3. Within 9 months from receipt of this document you must submit to the Product Manger:

a. Application for Pesticide Registration/Amendment (EPA Form 8570-1).

4. Within the time frames set forth in Table A, you must submit to the Registration Division all generic data, unless you are eligible for the formulator's exemption. If for any reason any test is delayed or aborted so that the schedule cannot be met, immediately notify the Product Manager and the Office of Compliance Monitoring of the problem, the reasons for the problem, and your proposed course of action.

C. End-Use Products containing the subject pesticide as, sole active ingredient.

1. Within 90 days from receipt of this document, you must submit to the Product Manager in the Registration Division:

a. FIFRA Section 3(c)(2)(B) Summary Sheet, with appropriate attachments^x (EPA Form 8580-1).

b. Confidential Statement of Formula (EPA Form 8570-4).

c. Formulator's Exemption Statement (EPA Form 8570-27), if applicable.

2. By September 1, 1988, you must submit to the Product Manager, five copies of labeling, as specified in Chapter IV.D. Required Labeling, including the container label and any associated supplemental labeling. Labeling should be either typewritten text on 8-1/2 x 11 inch paper or a mockup of the labeling suitable for storage in 8-1/2 x 11 files. The draft label must indicate the intended colors of the final label, clear indication of the front panel of the label, and the intended type sizes of the text.

3. Within 9 months from receipt of this document you must submit to the Product Manager:

a. Two copies of any product-specific data, if required by Table C (if included).

b. Product Specific Data Report (EPA Form 8580-4 if Table C lists required product-specific data.

D. End-Use Products containing the subject pesticide in combination with other active ingredients.

1. Within 90 days from receipt of this document, you must submit to the Product Manager in the Registration Division:

a. FIFRA Section 3(c)(2()B) Summary Sheet, with appropriate attachments (EPA Form 8580-1).

b. Confidential Statement of Formula (EPA Form 8570-4).

c. Formulator's Exemption Statement (EPA Form 8570-27), if applicable.

2. By September 1, 1988, you must submit to the Product Manager, five copies of labeling, as specified in Chapter IV.D. Required Labeling, including the container label and any associated supplemental labeling. Labeling should be either typewritten text on 8-1/2 x 11 inch paper or a mockup of the labeling suitable for storage in 8-1/2 x 11 files. The draft label must indicate the intended colors of the final label, clear indication of the front panel of the label, and the intended type sizes of the text.

3. Within 9 months from receipt of this document you must submit to the Product Manager:

a. Two copies of any product-specific data, if required by Table C (if included).

b. Product Specific Data Report (EPA Form 8580-4), if Table C lists required product-specific data.

E. Intrastate Products containing the subject pesticide either as sole active ingredient or in combination with other active ingredients.

Applications for full federal registration of intrastate products are required to be submitted no later than July 31, 1988.

F. Addresses

The required information must be submitted to the following address:

William H. Miller (PM 16)
Registration Division (TS-767C)
Office of Pesticide Programs
Environmental Protection Agency
401 M St., SW
Washington, D.C. 20460.

The address for submissions to the Office of Compliance Monitoring is:

Laboratory Data Integrity Assurance Division
Office of Compliance Monitoring (EN-342)
Environmental Protection Agency
401 M St., SW
Washington, D.C. 20460.

I. DATA APPENDICES

GUIDE TO TABLES

Tables A, B, and C contain listings of data requirements for the pesticides covered by this Registration Standard.

> Table A contains generic data requirements that apply to the pesticide in all products, including data requirements for which a "typical formulation" is the test substance.
>
> Table B contains product-specific data requirements that apply only to a manufacturing use product.
>
> Table C contains product-specific data requirements that apply only to an end use product.

The data tables are generally organized according to the following format:

1. Data Requirement (Column 1). The data requirements are listed in the order in which they appear in 40 CFR Part 158. The reference numbers accompanying each test refer to the test protocols set out in the Pesticide Assessment Guidelines, which are available from the National Technical Information Service, 5285 Prot Royal Road, Springfield, VA 22161.

2. Test Substance (Column 2). This column lists the composition of the test substance required to be used for the test, as follows:

TGAI = Technical grade of the active ingredient
PAI = Pure active ingredient
PAIRA = Pure Active ingredient, radio labeled
TEP = Typical end use formulation
MP = Manufacturing use product
EP = End use product

Any other test substances, such as metabolites, will be specifically named in Column 2 or in footnotes to the table.

3. Use pattern (Column 3). This column indicates the use patterns to which the data requirement applies. Use patterns are the same as those given in 40 CFR Part 158. The following letter designations are used for the given use patterns:

A = Terrestrial, food
B = Terrestrial, non-food
C = Aquatic, food
D = Aquatic, non-food
E = Greenhouse, food

F = Greenhouse, non-food
G = Forestry
H = Domestic outdoor
I = Indoor

Any other designations will be defined in a footnote to the table.

4. Does EPA have data? (Column 4). This column indicates one of three answers:

> YES - EPA has data in its files that completely satisfy this data requirement. These data may be cited by other registrants in accordance with data compensation requirements of Part 152, Subpart E.
>
> PARTIALLY - EPA has some data in its files, but such data do not fully satisfy the data requirement. In some cases, the Agency may possess data on one of two required species or may possess data on one test substance but not all. The term may also indicate that the data available to EPA are incomplete. In this case, when the data are clarified, or additional details of the testing submitted by the original data submitter, the data may be determined to be acceptable. If this is the case, a footnote to the table will usually say so.
>
> NO - EPA either possesses no data which are sufficient to fulfill the data requirement, or the data which EPA does possess are flawed scientifically in a manner that cannot be remedied by clarification or additional information.

5. Bibliographic citation (Column 5). If the Agency has acceptable data in its files, this column lists the identifying number of each study. This normally is the Master Record Identification (MRID) number, but may be a GS number if no MRID number has been assigned. Refer to the Bibliography Appendices for a complete citation of the study.

6. Must additional data be submitted? (Column 6). This column indicates whether the data must be submitted to the Agency. If column 3 indicates that the Agency already has data, this column will usually indicate NO. If column e indicates that the Agency has only partial data or no data, this column will usually indicate YES. In some cases, even though the Agency does not

have the data, EPA will not require its submission because of the unique characteristics of the chemical; because data on another chemical can be used to fulfill the data requirement; or because the data requirement has been waived or reserved. Any such unusual situations will be explained in a footnote to the table.

7. *Timeframe for submission* (Column 7). If column t requires that data be submitted, this column indicates when the data are to be submitted, based on the issuance date of the Registration Standard. The timeframes are those established either as a result of a previous Data Call-In letter, or standardized timeframes established by PR Notice 85-5 (August 22, 1985).

8. *Footnotes* (at the end of each table). Self-explanatory.

TABLE A
GENERIC DATA REQUIREMENTS FOR MEVINPHOS

Data Requirement	Test Substance[1]/	Use Patterns	Does EPA Have Data?	Bibliographic Citation (MRID)	Must Additional Data Be Submitted?	Timeframe for Submission[2]/
Sec. 158.120 Product Chemistry						
Product Identity and Composition						
61-2 - Description of Beginning Materials and Manufacturing Process	TGAI	All	[3]/	[3]/	Yes[4]/	6 Months
61-3 - Discussion of Formation of Impurities	TGAI	All	[3]/	[3]/	Yes[5]/	6 Months
Analysis and Certification of Product Ingredients						
62-1 - Preliminary Analysis of Product Samples	TGAI	All	[3]/	[3]/	Yes[6]/	12 Months
Physical and Chemical Characteristics						
63-2 - Color	TGAI	All	[3]/	[3]/	Yes[7]/	6 Months
63-3 - Physical State	TGAI	All	[3]/	[3]/	Yes[7]/	6 Months
63-4 - Odor	TGAI	All	[3]/	[3]/	Yes[7]/	6 Months
63-5 - Melting Point	TGAI	All	[3]/	[3]/	Yes[7]/,[8]/	6 Months
63-6 - Boiling Point	TGAI	All	[3]/	[3]/	Yes[7]/,[9]/	6 Months

TABLE A
GENERIC DATA REQUIREMENTS FOR MEVINPHOS

Data Requirement	Test Substance[1]/	Use Patterns	Does EPA Have Data?	Bibliographic Citation (MRID)	Must Additional Data Be Submitted?	Timeframe for Submission[2]/
Sec. 158.120 Product Chemistry (cont'd)						
Physical and Chemical Characteristics (cont'd)						
63-7 - Density, Bulk Density, or Specific Gravity	TGAI	All	[3]/	[3]/	Yes[7]/	6 Months
63-8 - Solubility	TGAI or PAI	All	[3]/	[3]/	Yes[7]/	6 Months
63-9 - Vapor Pressure	TGAI or PAI	All	[3]/	[3]/	Yes[7]/	6 Months
63-10 - Dissociation Constant	TGAI or PAI	All	[3]/	[3]/	Yes[7]/	6 Months
63-11 - Octanol/Water Partition Coefficient	PAI	All	[3]/	[3]/	Yes[7]/,[10]/	6 Months
63-12 - pH	TGAI	All	[3]/	[3]/	Yes[7]/,[11]/	6 Months
63-13 - Stability	TGAI	All	[3]/	[3]/	Yes[7]/	6 Months
Other Requirements:						
64-1 - Submittal of Samples	N/A	N/A	N/A	N/A	No	

TABLE A
GENERIC DATA REQUIREMENTS FOR MEVINPHOS

Sec. 158.120 Product Chemistry - Footnotes

1/ Test Substance: TGAI - Technical Grade of the Active Ingredient; PAI - Pure Active Ingredient.

2/ Due dates refer to the number of months following the registrant's receipt of this Registration Standard, unless otherwise indicated.

3/ Although product chemistry may have been submitted in the past, the Agency has determined that these data must be resubmitted for each pesticide. New data requirements have been introduced and previously submitted data must be updated. Therefore, bibliographic citations for the old data are not applicable.

4/ Complete information must be provided regarding the nature of the process (batch or continuous), the relative amounts of beginning materials and the order in which they are added, the chemical equations for each intended reaction, equipment used to produce each intermediate and the final product, reaction conditions, the duration of each step of the process, purification procedures, and quality control measures. In addition, the name and address of the manufacturer, producer, or supplier of each beginning material must be provided, along with information regarding the properties of each beginning material used to manufacture each product.

5/ A detailed discussion of all impurities that are or may be present at >0.1%, based on knowledge of the beginning materials, chemical reactions (intended and side) in the manufacturing process, and any contamination during and after production must be submitted.

6/ Five or more representative samples must be analyzed for the amount of active ingredient and each impurity for which a certified limit is required. Complete validation data (accuracy, precision) must be submitted for each analytical method used.

7/ Physicochemical characteristics (color, physical state, odor, melting point, boiling point, specific gravity, solubility, vapor pressure, dissociation constant, partition coefficient, pH, and stability) as required in 40 CFR 158.120 and more fully described in the Pesticide Assessment Guidelines, Subdivision D, must be submitted.

8/ Data needed if the technical chemical is a solid at room temperature.

9/ Data needed if the technical chemical is a liquid at room temperature.

10/ Required if the technical chemical is organic and non-polar.

11/ Required if the test substance is dispersible in water.

TABLE A
GENERIC DATA REQUIREMENTS FOR MEVINPHOS

Data Requirement	Test Substance[1]/	Does EPA Have Data?	Bibliographic Citation (MRID)	Must Additional Data Be Submitted?	Timeframe for Submission[2]/
Sec. 158.125 Residue Chemistry					
171-2 - Chemical Identity[3]/					
171-3 - Directions for Use		(See Index)			
171-4 - Nature of the Residue (Metabolism)					
- Plants	PAIRA	Partially	00054954, 00112690	Yes[4]/	18 Months
- Livestock	PAIRA and plant metabolites	Partially	00089697	Yes[5]/,[6]/	18 Months
171-4 - Residue Analytical Methods	TGAI and metabolites	Yes	00036987, 00036989, 00036990, 00089548, 00089559, 00089696, 00113304, 00113306, 00113309, 00113326, 00113334, 00126692, 00147425	No	
171-4 - Storage Stability Data	TEP and metabolites	Partially	00036988, 00113309, 00113320, 00147425	Yes[7]/	18 Months

TABLE A
GENERIC DATA REQUIREMENTS FOR MEVINPHOS

Data Requirement	Test Substance[1]/	Use Patterns	Does EPA Have Data?	Bibliographic Citation (MRID)	Must Additional Data Be Submitted?	Timeframe for Submission[2]/
Sec. 158.125 Residue Chemistry (cont'd)						
171-4 - Magnitude of the Residues in Plants						
- Crop Field Trials						
- Root and Tuber Vegetables Group						
o Beets, garden	TEP		Partially	00113326	No[8]/	
o Carrots	TEP		Partially	00113326	Yes[9]/	18 Months
o Potatoes	TEP		Partially	00112690 00113306 00113326	Yes[10]/ Yes[11]/	18 Months 24 Months
o Turnips	TEP		Partially	00089555	No[12]/	
- Leaves of Root and Tuber Vegetables Group						
o Beet greens	TEP		Partially	00112690 00113326	No[13]/	
o Chicory, red (leaves)	TEP		No		Yes[14]/	18 Months
o Turnip tops	TEP		Partially	00089555 00113326	Yes[15]/	18 Months
- Bulb Vegetables Group						
o Onions, green	TEP		Partially	00089555 00112690	Yes[16]/	18 Months

TABLE A
GENERIC DATA REQUIREMENTS FOR MEVINPHOS

Data Requirement	Test Substance[1]/	Use Patterns	Does EPA Have Data?	Bibliographic Citation (MRID)	Must Additional Data Be Submitted?	Timeframe for Submission[2]/
Sec. 158.125 Residue Chemistry (cont'd)						
171-4 - Magnitude of the Residues						
- Crop Field Trials (cont'd)						
- Leafy Vegetables Group						
o Celery	TEP		Partially	00113315	Yes[17]/	18 Months
o Lettuce	TEP		Partially	00113315, 00147425	Yes[18]/	18 Months
o Parsley	TEP		No		Yes[19]/	18 Months
o Spinach	TEP		Partially	00113304, 00113315	Yes[20]/	18 Months
- Brassica Leafy Vegetables Group						
o Broccoli	TEP		Partially	00147425	Yes[21]/	18 Months
o Brussels sprouts	TEP		Partially	00089555	No[22]/	
o Cabbage	TEP		Partially	00112690	Yes[23]/	18 Months
o Cauliflower	TEP		Partially	00113315, 00113326	No[24]/	
o Collards	TEP		Partially	00089555	Yes[25]/	18 Months
o Kale	TEP		Partially	00113315	No[26]/	
o Mustard greens	TEP		Partially	00113315, 00113326	Yes[27]/	18 Months

TABLE A
GENERIC DATA REQUIREMENTS FOR MEVINPHOS

Data Requirement	Test Substance[1]/	Use Patterns	Does EPA Have Data?	Bibliographic Citation (MRID)	Must Additional Data Be Submitted?	Timeframe for Submission[2]/
Sec. 158.125 Residue Chemistry (cont'd)						
171-4 - Magnitude of the Residues						
- Crop Field Trials (cont'd)						
- Legume Vegetables Group						
o Beans, succulent and dried	TEP		Partially	00044663, 00089555	Yes[28]/	18 Months
o Peas (Pisum spp.)	TEP		Partially	00089555, 00147425	Yes[29]/	18 Months
- Foliage of Legume Vegetables Group						
o Bean vines and hay	TEP		Partially	00113316, 00147425	Yes[30]/	18 Months
o Pea vines and hay	TEP		Partially	00112690	Yes[31]/	18 Months
- Fruiting Vegetables (Except Cucurbits) Group						
o Eggplant	TEP		Partially	00112690, 00113306	No[32]/	
o Peppers (Capsicum)	TEP		Partially	00112690, 00113306	Yes[33]/,[34]/	18 Months
o Tomatoes	TEP		Partially	00089555, 00112690, 00113329	Yes[35]/	18 Months
					Yes[36]/	24 Months

TABLE A
GENERIC DATA REQUIREMENTS FOR MEVINPHOS

Data Requirement	Test Substance[1]/	Use Patterns	Does EPA Have Data?	Bibliographic Citation (MRID)	Must Additional Data Be Submitted?	Timeframe for Submission[2]/
Sec. 158.125 Residue Chemistry (cont'd)						
171-4 - Magnitude of the Residues						
- Crop Field Trials (cont'd)						
- Cucurbit Vegetables Group						
o Cucumbers	TEP		Partially	00089555	Yes[37]/	18 Months
o Melons	TEP		Partially	00113306, 00113318	Yes[38]/	18 Months
o Squash, summer	TEP		Partially	00113306	Yes[39]/	18 Months
o Watermelon	TEP		Partially	00113306	Yes[40]/	18 Months
- Citrus Fruits Group						
o (Grapefruit, Lemons Oranges, Tangerines)	TEP		Partially	00089696, 00089698, 00113309, 00147425	Yes[41]/ Yes[42]/	18 Months 24 Months
- Pome Fruits						
o Apples	TEP		Partially	00089555, 00112690	Yes[43]/ Yes[44]/	18 Months 24 Months
o Pear	TEP		Partially	00089555	No[45]/	

TABLE A
GENERIC DATA REQUIREMENTS FOR MEVINPHOS

Data Requirement	Test Substance[1]/	Use Patterns	Does EPA Have Data?	Bibliographic Citation (MRID)	Must Additional Data Be Submitted?	Timeframe for Submission[2]/
Sec. 158.125 Residue Chemistry (cont'd)						
171-4 - Magnitude of the Residues						
- Crop Field Trials (cont'd)						
- Stone Fruits						
o Cherries	TEP		Partially	00147425	No[46]/	
o Peaches	TEP		Partially	00089555	Yes[47]/	18 Months
o Plums (fresh prunes)	TEP		Partially	00089555	Yes[48]/ Yes[49]/	18 Months 24 Months
- Small Fruits and Berries						
o Grapes	TEP		Partially	00113324	Yes[50]/ Yes[51]/	18 Months 24 Months
o Raspberries	TEP		Partially	00089555	Yes[52]/	18 Months
o Strawberries	TEP		Partially	00089555, 00147425, 00113315	Yes[53]/	18 Months
- Tree Nuts						
o Walnuts	TEP		Partially	00147425	Yes[54]/	18 Months

TABLE A
GENERIC DATA REQUIREMENTS FOR MEVINPHOS

Data Requirement	Test Substance[1]/	Use Patterns	Does EPA Have Data?	Bibliographic Citation (MRID)	Must Additional Data Be Submitted?	Timeframe for Submission[2]/
Sec. 158.125 Residue Chemistry (cont'd)						
171-4 - Magnitude of the Residues						
- Crop Field Trials (cont'd)						
- Cereal Grains						
o Corn (field and fresh)	TEP		Partially	00089555	Yes[55]/ Yes[56]/	18 Months 24 Months
o Sorghum	TEP		Partially	00089555	Yes[57]/ Yes[58]/	18 Months 24 Months
- Forage, Fodder, and Straw of Cereal Grains						
o Corn forage and fodder	TEP		Partially	00112690	Yes[59]/,[60]/	18 Months
o Sorghum forage and fodder	TEP		Partially	00089555	Yes[61]/	18 Months
- Non-grass Animal Feeds						
o Alfalfa forage and hay	TEP		Partially	00089555, 00112690	Yes[62]/	18 Months
o Birdsfoot Trefoil forage and hay	TEP		No		Yes[63]/	18 Months
o Clover forage and hay	TEP		Partially	00089555, 00112690	Yes[64]/	18 Months

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Sec. 158.125 Residue Chemistry (cont'd)						
171-4 - Magnitude of the Residues						
- Crop Field Trials (cont'd)						
- Miscellaneous Commodities						
o Artichokes	TEP		Partially	00147425	Yes[65]/	18 Months
o Okra	TEP		Partially	00147425	Yes[66]/	18 Months
o Watercress	TEP		Partially	00126692	Yes[67]/	18 Months
- Crops Grown Solely for Seed						
o Bermudagrass	TEP		No		Yes[68]/	18 Months
o Sesame	TEP		No		Yes[69]/	18 Months
171-4 - Magnitude of the Residues in Cooked Food			Yes	00036998	No	
171-4 - Magnitude of the Residues in Meat/Milk/Poultry/Eggs			Partially	00113325	Reserved[70]/	18 Months

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Sec. 158.125 Residue Chemistry - Footnotes

1/ Test Substance: TGAI - Technical Grade of the Active Ingredient; PAI - Pure Active Ingredient; PAIRA - Purified Active Ingredient, Radiolabeled; TEP - Typical End-Use product; EP - End-Use Product.

2/ Due dates refer to the number of months following the registrant's receipt of this Registration Standard, unless otherwise indicated.

3/ The same chemical identity data required as under 158.120, with emphasis on impurities that could constitute residue problems. Refer to Product Chemistry Data Requirements tables (A and B).

4/ Data depicting the uptake, distribution, metabolism, and total terminal residues of $[^{32}P]$ or $[^{14}C]$ mevinphos in three dissimilar crops (e.g., root crop, oilseed and a leafy vegetable). The identities and quantities of residues in or on mature plant parts must be characterized in the raw agricultural commodities following foliar application of formulated mevinphos at a rate sufficiently high to permit residue identification. Residue information must be confirmed by a method such as GC, HPLC, and/or mass spectrometry. Data representing solvent extraction of mevinphos residues must also be represented. Representative samples from these studies must also be analyzed using enforcement methods (including all FDA Multiresidue Protocols) to ascertain that these methods are capable of adequately recovering and quantifying all residues of toxicological concerns.

5/ Metabolism studies utilizing ruminants and poultry. Animals must be dosed orally for a minimum of 3 days with either $[^{32}P]$ or $[3\text{-}^{14}C]$ mevinphos at a level sufficient to make residue identification and quantification possible. Milk and eggs must be collected twice a day during the dosing period. Animals must be sacrificed within 24 hours of the final dose. The distribution and identity of residues must be determined in milk, eggs, liver, kidney, muscle, and fat. Samples from these studies must also be analyzed using enforcement methods (including all FDA Multiresidue Protocols ([I-IV]) to ascertain that the methods are capable of adequately recovering and identifying all residues of toxicological concern.

6/ Data depicting the nature of mevinphos residues in swine are also required if the required metabolism studies with ruminants and poultry reveal that the metabolism of mevinphos in these animals differs from that in rats.

7/ Data depicting the stability of mevinphos residues of concern in or on a representative oilseed and a representative root crop. Samples bearing field-weathered residues or fortified samples must be analyzed immediately after harvest or fortification and again after storage intervals that are equivalent to those reflected in all previously submitted and currently requested data. Storage conditions for the samples must also reflect those in previously submitted and currently requested data. The chosen intervals must allow for unforeseen delays in sample storage.

8/ Additional data are not required since data requested for carrots will be translated to beets. However, it should be noted that if the data requested for carrots are not provided then data on beets are required and must be submitted within the 18 months timeframe set forth for submitting the data for carrots.

TABLE A
GENERIC DATA REQUIREMENTS FOR MEVINPHOS

Sec. 158.125 Residue Chemistry - Footnotes (cont'd)

9/ Data depicting mevinphos residues of concern in or on carrots harvested 2 days after the last of multiple foliar applications of an EC, SC/L, and a D formulation at 0.5 lb ai/A, using aerial and ground equipment in separate tests. Each formulation must be represented in a separate test. The registrant must propose a maximum seasonal use rate or a maximum number of applications per season. The required tests must reflect this maximum number. Tests must be conducted in California (48%), Michigan (7%), and Texas (9%) which accounted for about 60% of the 1985 U.S. carrot production (Agricultural Statistics, 1986, p. 151)

10/ Data depicting mevinphos residues of concern in or on potatoes harvested 1 day after the last of multiple foliar applications of an EC, SC/L, and a D formulation at 0.25 lb ai/A, and data depicting residues in or on potatoes harvested 4 days after the last of multiple foliar applications of the 4 lb/gal EC formulation at 1.0 lb ai/A. Ground and aerial equipment must be represented in separate tests. Each formulation must be represented in a separate test. The registrant must propose a maximum seasonal use rate or a maximum number of applications per season. The required tests must reflect this maximum number. Tests must be conducted in Idaho (25%) and Maine (7%) which accounted for about 60% of the 1985 U.S. potato production and represent the major potato growing regions if Idaho is representative of California (6%), Oregon (7%), and Washington (15%) (Agricultural Statistics, 1986, p. 164).

11/ Data depicting the potential for concentration of mevinphos residues in potato chips, granules or flakes, wet peel, and dry peel during the processing of treated potatoes bearing measurable, weathered residues. If the data indicate a potential for residue concentration in any of these commodities, the registrant must propose an appropriate food/feed additive tolerance.

12/ Additional data are not required since the data requested for carrots will be translated to turnips. However, it should be noted that if the data requested for carrots are not provided then data on turnips are required and must be submitted within the 18 months timeframe set forth for submitting the data for carrots.

13/ Additional data are not required since the data requested for turnip tops will be translated to beet greens. However, it should be noted that if the data requested for turnip tops are not provided then data on beet greens are required and must be submitted within the 18 months timeframe set forth for submitting the data for turnip tops.

14/ Data depicting mevinphos residues of concern in or on chicory harvested 7 days after the last of three foliar applications of the 4 lb/gal EC formulation at 1 lb ai/A, applied with aerial and ground equipment in separate tests made in a minimum of 10 and 100 gal/A, respectively. Tests must be conducted in California in which this use is permitted (EPA SLN No. CA860073).

TABLE A
GENERIC DATA REQUIREMENTS FOR MEVINPHOS

Sec. 158.125 Residue Chemistry - Footnotes (cont'd)

15/ Data depicting mevinphos residues of concern in or on turnip tops harvested 3 days after multiple foliar applications of an EC, SC/L, and a D formulation at 0.5 lb ai/G, to be applied with aerial and ground equipment in separate tests. Each formulation must be represented in a separate test. The registrant must propose a maximum seasonal use rate or a maximum number of applications per season. Required tests must reflect this maximum number. Tests must be conducted in California (4%), Florida (10%), Illinois (4%), and Tennessee (17%) which collectively accounted for about 38% of the 1982 U.S. turnip green acreage (1982 Census of Agriculture, Vol. 1, Part 51, p. 355).

16/ Data depicting mevinphos residues of concern in or on green onions harvested 1 day following multiple foliar applications (using ground and aerial equipment in separate tests) of an EC, SC/L, and a D formulation at 0.5 lb ai/A. Each formulation must be represented in a separate test. The registrant must propose a maximum seasonal use rate or a maximum number of applications per season. Required tests must reflect this maximum number. Tests must be conducted in California (36%), Texas (23%), and New York (4%) which accounted for about 60% of the 1982 U.S. green onion acreage (1982 Census of Agriculture, Vol. 1, Part 51, p. 347).

17/ Data depicting mevinphos residues of concern in or on celery. The 2% D, an EC, and A SC/L formulation must be applied (each in separate tests) at 0.5 and 1 lb ai/A, and samples must be collected 3 and 5 days, respectively, following the last of multiple foliar applications. The use of aerial and ground equipment must be represented in separate tests. The registrant must propose a maximum number of applications per season and the requested data must reflect this maximum number. Tests must be conducted in California (72%), Florida (18%), and Michigan (9%) which collectively accounted for about 100% of the 1985 U.S. celery crop (Agricultural Statistics, 1986, p. 154), and represent the major celery production regions.

18/ Data depicting mevinphos residues of concern in or on head and leaf lettuce harvested 2 and 4 days, respectively, following multiple foliar applications at 0.5 and 1 lb ai/A of an EC, SC/L, and the 2% D formulation. Applications must be made with aerial and ground equipment, in separate tests. The registrant must propose a maximum seasonal use rate or a maximum number of applications per season. The required tests must reflect this maximum number. Tests must be conducted in California since this state produced about 70% of the 1985 U.S. lettuce crop (Agricultural Statistics, 1986, p. 159).

19/ Data depicting mevinphos residues of concern in or on parsley harvested 5 and 8 days following the last of three foliar applications of the 4 lb/gal EC formulation at 0.5 and 1 lb ai/A, respectively. Applications by ground and aerial equipment must be performed in separate tests. Tests must be conducted in California (37%), Florida (14%), New Jersey (13%), and Texas (14%) since about 80% of the U.S. parsley acreage is located in these states; acreage figures given parenthetically were obtained from 1982 Census of Agriculture, Vol 1, Part 51, p. 348.

TABLE A
GENERIC DATA REQUIREMENTS FOR MEVINPHOS

Sec. 158.125 Residue Chemistry - Footnotes (cont'd)

20/ Data depicting mevinphos residues of concern in or on spinach harvested 4 and 7 days following multiple foliar applications of an EC, SC/L, and the 2% D formulation at 0.5 and 1 lb ai/A, respectively. Applications must be made with aerial and ground equipment in separate tests. Each formulation must be represented in separate tests. The registrant must propose a maximum seasonal use rate or a maximum number of applications per season. The required tests must reflect this maximum number. Tests must be conducted in California (24%), Texas (25%) and New Jersey (6%) which accounted for about 60% of the 1982 U.S. spinach acreage if New Jersey is representative of New York (5%) and Maryland (3%) (1982 Census of Agriculture, Vol. 1, Part 51, p. 352).

21/ Data depicting mevinphos residues of concern in or on broccoli harvested 3 days after the last of multiple foliar applications of an EC, SC/L, and a D formulation at 1 lb ai/A. Applications must be made by aerial and ground equipment in separate tests. Each formulation must be represented in a separate test. The registrant must propose a maximum seasonal use rate or a maximum number of applications per season. Required tests must reflect this maximum number. Tests must be conducted in California which accounted for about 90% of the 1985 U.S. broccoli production (Agricultural Statistics, 1986, p. 150).

22/ Additional data are not required since the data requested for broccoli will be translated to Brussels sprouts. However, it should be noted that if the data requested for broccoli are not provided then data on Brussels sprouts are required and must be submitted within the 18 months timeframe set forth for submitting the data for broccoli.

23/ Data depicting mevinphos residues of concern in or on cabbage harvested 3 days after the last of multiple foliar applications of an EC, SC/L, and a D formulation at 1 lb ai/A. Applications must be made with aerial and ground equipment in separate tests. Each formulation must be represented in a separate test. The registrant must propose a maximum seasonal use rate or a maximum number of applications per season. Required tests must reflect this maximum number. Tests must be conducted in Texas (16%), Florida (16%), New York (15%), and Wisconsin (9%) which accounted for about 70% of the 1982 U.S. cabbage acreage if Wisconsin is representative of Ohio (3%) and Michigan (3%), and New York is representative of New Jersey (3%) (1982 Census of Agriculture, Vol. 1, Part 51, p. 338).

24/ Additional data are not required since the data requested for broccoli will be translated to cauliflower. However, it should be noted that if the data requested for broccoli are not provided then data on cauliflower are required and must be submitted within the 18 months timeframe set forth for submitting the data for broccoli.

25/ Data depicting mevinphos residues of concern in or on collards harvested 3 and 7 days after the last of multiple foliar applications of an EC, SC/L, and a D formulation at 0.5 and 1.0 lb ai/A, respectively. Applications must be made with aerial and ground equipment in separate tests. Each formulation must be represented in a separate test. The registrant must propose a maximum seasonal use rate or a maximum number of applications per season. Required tests must reflect this maximum number. Tests must be conducted in Arizona (5%) and Georgia (20%) which accounted for about 50% of the 1982 U.S. collard acreage if Georgia is representative of Florida (10%) and South Carolina (9%) and if Arizona is representative of California (3%) (1982 Census of Agriculture, Vol. 1, Part 51, p. 345).

TABLE A
GENERIC DATA REQUIREMENTS FOR MEVINPHOS

Sec. 158.125 Residue Chemistry - Footnotes (cont'd)

26/ Additional data are not required since the data requested for collards will be translated to kale. However, it should be noted that if the data requested for collards are not provided then data on kale are required and must be submitted within the 18 months timeframe set forth for submitting the data for collards.

27/ Data depicting mevinphos residues of concern in or on mustard greens harvested 3 days after the last of multiple foliar applications of an EC, SC/L, and a D formulation at 0.5 lb ai/A. Applications must be made with aerial and ground equipment in separate tests. Each formulation must be represented in a separate test. The registrant must propose a maximum seasonal use rate or a maximum number of applications per season. Required tests must reflect this maximum number. Tests must be conducted in California (13%), Florida (7%) and Texas (12%) which accounted for about 60% of the 1982 U.S. mustard green acreage if California is representative of Arizona (12%) and Florida is representative of South Carolina (6%), North Carolina (5%) and Georgia (5%) (1982 Census of Agriculture, Vol. 1, Part 51, p. 346).

28/ Data depicting mevinphos residues of concern in or on beans (one succulent and one dried variety in separate tests) harvested 1 day after the last of multiple foliar applications of an EC, SC/L, and the 2% D formulation at 0.5 lb ai/A, to be applied with aerial and ground equipment in separate tests. Each formulation must be represented in a separate test. The registrant must propose a maximum seasonal use rate or a maximum number of applications per season. Required tests must reflect this maximum number. Tests must be conducted in California (16% dry), Oregon (18% snap) or Idaho (9% dry), Michigan (7% snap; 24% dry) or Nebraska (16%), New York (12%) and Wisconsin (35% snap) since these states account for about 60% and 70% of the 1985 U.S. edible dry bean and snap bean crops, respectively; (Agricultural Statistics, 1986, p. 149 and p. 252).

29/ Data depicting mevinphos residues of concern in or on peas (one succulent and one dried variety in separate tests) harvested 1 day after the last of multiple foliar applications of an EC, SC/L, and the 2% D formulation at 0.5 lb ai/A, to be applied with aerial and ground equipment in separate tests. Each formulation must be represented in a separate test. The registrant must propose a maximum seasonal use rate or a maximum number of applications per season. Required tests must reflect this maximum number. Tests must be conducted in Minnesota (20%) or Wisconsin (28%) and Washington (17%) which collectively accounted for about 70% of the 1985 U.S. green peas grown for processing (Agricultural Statistics, 1986, p. 162).

30/ Tolerances must be proposed and data submitted depicting mevinphos residues of concern in or on bean vines and hay harvested 1 day after the last of multiple foliar applications of an EC, SC/L, and the 2% D formulation at 0.5 lb ai/A, to be applied with aerial and ground equipment in separate tests. Each formulation must be represented in a separate test. The registrant must propose a maximum seasonal use rate or a maximum number of applications per season. Required tests must reflect this maximum number. Tests must be conducted in California (16% dry), Oregon (18% snap) or Idaho (9% dry), Michigan (7% snap; 24% dry) or Nebraska (16%), New York (12%) and Wisconsin (35% snap) since these states account for about 60% and 70% of the 1985 U.S. edible dry bean and snap bean crops, respectively; (Agricultural Statistics, 1986, p. 149 and p. 252). Alternatively, the registrant may propose a label amendment restricting the feeding or grazing of treated bean hay and vines to livestock.

TABLE A
GENERIC DATA REQUIREMENTS FOR MEVINPHOS

Sec. 158.125 Residue Chemistry - Footnotes (cont'd)

31/ Data depicting mevinphos residues of concern in or on pea vines harvested 1 day following the last of multiple foliar applications of an EC, SC/L, and a D formulation at 0.5 lb ai/A, to be applied with aerial and ground equipment in separate tests. Each formulation must be represented in a separate test. The registrant must propose a maximum seasonal use rate or a maximum number of applications per season. Required tests must reflect this maximum number. Tests must be conducted in Minnesota (22%) or Wisconsin (28%) and Washington (17%) which collectively accounted for about 70% of the 1985 U.S. green pea production (Agricultural Statistics, 1986, p. 162). Also, since pea hay is a raw agricultural commodity, the registrant must propose a tolerance and submit appropriate supporting data. Alternatively, the registrant may propose a label amendment restricting the feeding or grazing of pea vines and hay by livestock.

32/ Additional data are not required since the data requested for tomatoes will be translated to eggplant. However, it should be noted that if the data requested for tomatoes are not provided then data on eggplant are required and must be submitted within the 18 months timeframe set forth for submitting the data for tomatoes.

33/ Data depicting mevinphos residues of concern in or on peppers harvested 2 days following multiple foliar applications (using ground and aerial equipment in separate tests) of an EC, SC/L, and the 2% D formulation at 0.5 lb ai/A. Each formulation must be represented in a separate test. Aerial applications must be made in a minimum of 3 gal/A and ground applications must be made in a minimum of 10 gal/A. Tests must be conducted in California (18%), Florida (23%), Michigan (3%), New Jersey (7%) and Texas (16%) which collectively accounted for about 67% of U.S. sweet pepper acreage (1982 Census of Agriculture, Vol.1, Part 51, p. 350). The registrant must propose a maximum seasonal use rate or a maximum number of applications per season. Required tests must reflect this maximum number.

34/ Data depicting mevinphos residues of concern in or on peppers harvested 4 days following multiple foliar applications of the 4 lb/gal EC formulation at 1 lb ai/A. Ground and aerial equipment must be represented in separate tests. Tests must be conducted in California. The registrant must propose a maximum number of applications per season or a maximum seasonal application rate. Required tests must reflect this maximum. Also, the registrant must amend the appropriate product labels by deleting the limitations for use on peppers grown for processing.

35/ Data depicting mevinphos residues of concern in or on tomatoes harvested 1 day following multiple foliar applications (using ground and aerial equipment in separate tests) of the 2% D formulation and (in separate tests) an EC and a SC/L formulation at 0.5 lb ai/A. Aerial applications must be made in a minimum of 3 gal/A and ground applications must be made in a minimum of 10 gal/A. Tests must be conducted in California (26%) and Florida (47%) which accounted for about 73% of U.S. fresh market tomato production; California produced about 85% of U.S. tomatoes for processing (Agricultural Statistics, 1986, p. 172). The registrant must propose a maximum number of applications per season or a maximum seasonal application rate. Submitted tests must reflect the proposed maximum.

36/ A processing study depicting mevinphos residues of concern in products (dry pomace, puree, catsup and juice) processed from tomatoes bearing measurable, weathered residues. If residues concentrate in any product, appropriate food/feed additive tolerances must be proposed.

TABLE A
GENERIC DATA REQUIREMENTS FOR MEVINPHOS

Sec. 158.125 Residue Chemistry - Footnotes (cont'd)

37/ Data depicting mevinphos residues of concern in or on cucumbers harvested 1 day following the last of multiple foliar applications (using ground and aerial equipment in separate tests) of the 2% D, 10.3 lb/gal SC/L, and an EC formulation at 0.5 lb ai/A. Each formulation must be represented in a separate test. The registrant must propose a maximum number of applications per season or a maximum seasonal use rate. Required tests must reflect this maximum rate. Tests must be conducted in California (11%), Michigan (19%) or Wisconsin (9%), North Carolina (14%), Ohio (9%) and Texas (5%) since these states collectively accounted for about 70% of the 1985 U.S. cucumber production (Agricultural Statistics, 1986, p. 157).

38/ Data depicting mevinphos residues of concern in or on melons harvested 1 day following the last of multiple foliar applications (using ground and aerial equipment in separate tests) of the 2% D, SC/L, and an EC formulation at 0.5 lb ai/A. Each formulation must be represented in separate tests. The registrant must propose a maximum number of applications per season or a maximum seasonal use rate. The required tests must reflect this maximum rate. Tests must be conducted in California (52%) and Texas (21%) which accounted for about 70% of the 1982 U.S. cantaloupe acreage (1982 Census of Agriculture, Vol. 1, Part 51, p. 339).

39/ Data depicting mevinphos residues of concern in or on summer squash harvested 1 day following the last of multiple foliar applications (using ground and aerial equipment in separate tests) of the 2% D, SC/L, and an EC formulation at 0.5 lb ai/A. Each formulation must be represented in separate tests. The registrant must propose a maximum number of applications per season or a maximum seasonal use rate. The required tests must reflect this maximum rate. Tests must be conducted in California (15%), Florida (21%), New Jersey (6%) and Texas (7%) which accounted for about 50% of the 1982 U.S. squash acreage (1982 Census of Agriculture, Vol. 1, Part 51, p. 353).

40/ Data depicting mevinphos residues of concern in or on watermelons harvested 1 day following the last of multiple foliar applications (using ground and aerial equipment in separate tests) of the 2% D, 10.3 lb/gal SC/L, and an EC formulation at 0.5 lb ai/A. Each formulation must be represented in separate tests. The registrant must propose a maximum number of applications per season or a maximum seasonal use rate. The required tests must reflect this maximum rate. Tests must be conducted in California (10%), Delaware (20%), Florida (9%) and Texas (24%) which accounted for about 60% of the 1982 U.S. watermelon acreage (1982 Census of Agriculture, Vol. 1, Part 51, p. 357).

41/ Data depicting mevinphos residues of concern in or on representative members of the citrus fruits group (oranges, grapefruits and lemons) harvested 1 day following multiple foliar applications at 7-day intervals of the 10.3 lb/gal SC/L and, in separate tests an EC formulation sprayed to runoff at the maximum proposed lb ai/100 gal rate. Ground and aerial equipment must be represented in separate tests. The registrant must propose a maximum number of applications per season or a maximum seasonal application rate. The requested data must reflect this maximum number. The registrant must also propose to amend the appropriate product labels to specify a maximum lb ai/100 gal rate sprayed to runoff. Tests must be conducted in Florida which accounted for about 70% and 80% of 1984-85 U.S. orange and grapefruit production, respectively, and in California which accounted for about 80% of the 1984-85 U.S. lemon production (Agricultural Statistics, 1986, p. 198).

TABLE A
GENERIC DATA REQUIREMENTS FOR MEVINPHOS

Sec. 158.125 Residue Chemistry - Footnotes (cont'd)

42/ Data depicting mevinphos residues of concern in citrus pulp, molasses, oil and juice processed from citrus fruits bearing measurable, weathered residues. if residues concentrate in any of these processed commodities then an appropriate food/feed additive tolerance must be proposed.

43/ Data depicting mevinphos residues of concern in or on apples harvested 1 day following the last of multiple foliar applications of an EC and the 10.3 lb/gal SC/L formulations at 3 lb ai/A, and the 2% D formulation at 1.2 lb ai/A, using ground and aerial equipment in separate tests. Each formulation must be represented in a separate test. The registrant must propose a maximum number of applications per season or a maximum seasonal rate for each use. The requested data must reflect the maximum rate. Tests must be conducted in California (8%), Michigan (14%), New York (14%) and Washington (26%), which collectively accounted for about 60% of the 1985 U.S. apple production (Agricultural Statistics, 1986, p. 186).

44/ Data depicting mevinphos residues of concern in dry apple pomace and juice processed from apples bearing measurable, weathered residues. If residues concentrate in any of these processed commodities then an appropriate food/feed additive tolerance must be proposed.

45/ Additional data are not required since the data requested in support of the tolerance for mevinphos residues in or on apples will be translated to pears. However, it should be noted that if the data for apples are not provided then data on pears are required and must be submitted within the 18 months timeframe set forth for submitting the data for apples. Note also that translated data may not be used to support a crop group tolerance.

46/ Additional data are not required since the data requested in support of the tolerance for mevinphos residues in or on plums (fresh prunes) will be translated to cherries. However, it should be noted that if the data for plums are not provided then data on cherries are required and must be submitted within the 18 months timeframe set forth for submitting the data for plums. Note also that translated data may not be used to support a crop group tolerance.

47/ Data depicting mevinphos residues of concern in or on peaches harvested 1 day following the last of multiple foliar applications of an EC and the 10.3 lb/gal SC/L formulations at 2.5 lb ai/A. Each formulation class must be represented in a separate test. The registrant must propose a maximum seasonal application rate or a maximum number of applications per season. The requested data must reflect this maximum. Tests must be conducted in California (68%), South Carolina (11%) and Michigan (3%) or Pennsylvania (2%) which collectively accounted for about 80% of the 1985 U.S. peach production (Agricultural Statistics, 1986, p. 211).

48/ Data depicting mevinphos residues of concern in or on plums harvested one day following the last of multiple foliar applications of an EC and the 10.3 lb/gal SC/L formulations at 2.5 lb ai/A. Each formulation must be represented in separate tests. The registrant must propose a maximum seasonal application rate or a maximum number of applications per season. The requested data must reflect this maximum number. Tests must be conducted in Michigan (22%) and Oregon (49%) which collectively accounted for about 70% of the 1985 U.S. plum and fresh prunes production (Agricultural Statistics, 1986, p. 218).

TABLE A
GENERIC DATA REQUIREMENTS FOR MEVINPHOS

Sec. 158.125 Residue Chemistry - Footnotes (cont'd)

49/ Data depicting the concentration of mevinphos residues of concern in dried prunes processed from plums (fresh prunes) bearing measurable, weathered residues. If the data indicate a potential for concentration of residues during processing, an appropriate food additive tolerance must be proposed.

50/ Data depicting mevinphos residues of concern in or on grapes harvested 5 days after the last of multiple foliar applications (using ground and aerial equipment in separate tests) of an EC, the 2% D, and the 10.3 lb/gal SC/L formulations at 1 lb ai/A; and 2 days following applications of these same formulations at 0.5 lb ai/A. Each formulation must be represented in separate tests. The registrant must propose a maximum number of applications per season or a maximum seasonal application rate. The requested data must reflect these rates. The tests must be conducted in California which accounted for about 90% of the 1985 U.S. grape production (Agricultural Statistics, 1986, p. 206).

51/ Data depicting the potential for concentration of mevinphos residues in raisins, dry pomace, raisin waste, and grape juice processed from grapes bearing measurable, weathered residues. If the data indicate a potential for concentration of residues in any of these commodities, an appropriate food/feed additive tolerance must be proposed.

52/ Data depicting mevinphos residues of concern in or on raspberries harvested 3 days after the last of multiple foliar applications (using ground and aerial equipment in separate tests) of an EC and the 10.3 lb/gal SC/L formulation at 0.64 lb ai/A. Each formulation must be represented in a separate test. The registrant must propose a maximum seasonal use rate or a maximum number of applications per season. The requested data must reflect this maximum rate. Tests must be conducted in Oregon (40%) and Washington (40%) which collectively accounted for about 80% of the 1982 U.S. raspberry production (1982 Census of Agriculture, Vol. 1, Part 51, p. 372).

53/ Data depicting mevinphos residues of concern in or on strawberries harvested 1 and 2 days after the last of multiple foliar applications of an EC, the 2% D, and the 10.3 lb/gal SC/L formulations at 0.5 and 1.0 lb ai/100 gal/A, respectively. The registrant must propose a maximum seasonal use rate or a maximum number of applications per season. Tests must be conducted in California which accounted for about 80% of the 1985 U.S. production of strawberries (Agricultural Statistics, 1986, p. 221).

54/ Data depicting mevinphos residues of concern in or on walnuts harvested 1 day after the last of multiple foliar applications of an EC and the 10.3 lb/gal SC/L at 2.5 lb ai/A. Each formulation class must be represented in separate tests. The registrant must propose a maximum seasonal use rate or a maximum number of applications per season. The required data must reflect the maximum rate. Tests must be conducted in California which accounted for about 100% of the 1982 U.S. walnut acreage (1982 Census of Agriculture, Vol. 1, Part 51, p. 368).

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GENERIC DATA REQUIREMENTS FOR MEVINPHOS

Sec. 158.125 Residue Chemistry - Footnotes (cont'd)

55/ Data depicting mevinphos residues of concern in or on sweet corn (kernels plus cobs with husks removed), field corn grain, and popcorn grain harvested 1 day after the last of multiple foliar applications of an EC, the 10.3 lb/gal SC/L, and the 2% D formulation at 0.5 lb ai/A, to be applied with aerial and ground equipment in separate tests. Each formulation must be represented in separate tests. The registrant must propose a maximum seasonal use rate or a maximum number of applications per season. The required tests must reflect this maximum number. Tests on sweet corn must be conducted in California (10% fresh market), Florida (29% fresh market), Minnesota (26% processing) and Wisconsin (25% processing). Tests on field corn must be conducted in Iowa (19%), Illinois (16%) and Nebraska (11%) since these states represent the major U.S. corn grain production region (Iowa, Illinois, Indiana, Minnesota, Nebraska, and Ohio) and collectively produced about 70% of the 1985 U.S. corn grain crop. Production figures for corn grain and sweet corn were obtained from Agricultural Statistics, 1986, p. 32 and p. 156, respectively.

56/ A processing study depicting the concentration of mevinphos residues of concern in the following products processed from field corn grain bearing measurable, weathered residues: starch, crude and refined oil from wet and dry milling, grits, meal, flour, and grain dust. If residues concentrate in any product, an appropriate food/feed additive tolerance must be proposed.

57/ Data depicting mevinphos residues of concern in or on sorghum grain harvested 3 days after the last of multiple foliar applications of an EC, SC/L, and the D formulations at 0.5 lb ai/A, to be applied with aerial and ground equipment in separate tests. Each formulation must be represented in separate tests. The registrant must propose a maximum seasonal use rate or maximum number of applications per season. The required tests must reflect this maximum number. Tests must be conducted in Arkansas (6%) or Texas (22%) and Kansas (26%) or Nebraska (14%) which collectively accounted for about 70% of the 1985 sorghum production (Agricultural statistics, 1986, p. 52).

58/ A processing study depicting the concentration of mevinphos residues of concern in flour, starch, and grain dust processed from sorghum grain bearing measurable, weathered residues. If residues concentrate in any product, an appropriate food/feed additive tolerance must be proposed.

59/ Data depicting mevinphos residues of concern in or on corn forage harvested 1 day after the last of multiple foliar applications of an EC, the 10.3 lb/gal SC/L, and the 2% D formulation at 0.5 lb ai/A, to be applied with aerial and ground equipment in separate tests. Each formulation must be represented in separate tests. The registrant must propose a maximum seasonal use rate or a maximum number of applications per season. The required tests must reflect this maximum number. Tests on sweet corn must be conducted in California (10% fresh market), Florida (29% fresh market), Minnesota (26% processing) and Wisconsin (25% processing). Tests on field corn must be conducted in Iowa (19%), Illinois (16%) and Nebraska (11%) since these states represent the major U.S. corn grain production region (Iowa, Illinois, Indiana, Minnesota, Nebraska and Ohio collectively produced about 70% of the 1985 U.S. corn grain crop). Production figures for corn grain and sweet corn were obtained from Agricultural Statistics, 1986, p. 32 and p. 156, respectively.

TABLE A
GENERIC DATA REQUIREMENTS FOR MEVINPHOS

Sec. 158.125 Residue Chemistry - Footnotes (cont'd)

60/ Since corn fodder is a raw agricultural commodity, the registrant must propose a tolerance and submit appropriate supporting residue data.

61/ Data depicting mevinphos residues of concern in or on sorghum fodder and hay harvested 1 day after the last of multiple foliar applications (using ground and aerial equipment in separate tests) of an EC, the 10.3 lb/gal SC/L, and the 2% D formulation at 0.5 lb ai/A. Each formulation must be represented in separate tests. The registrant must propose a maximum seasonal use rate or a maximum number of applications per season. The required tests must reflect this maximum number. Tests must be conducted in Kansas (36%) or Nebraska (13%) and Georgia (6%) since these states produced about 60% of the 1985 sorghum crop used for silage and forage; production figures given in parentheses were obtained from Agricultural Statistics, 1986, p. 52.

62/ Data depicting mevinphos residues of concern in or on alfalfa forage and hay harvested 1 day following the last of multiple foliar applications, using ground and aerial equipment in separate tests, of an EC, SC/L and the 2% D formulation at 0.5 lb ai/A. Each formulation class must be represented in separate tests. The registrant must propose a maximum number of applications per season or a maximum seasonal application rate for each registered use. The required tests must reflect this number or maximum rate. The registrant must also propose an appropriate tolerance for mevinphos residues of concern in or on alfalfa hay. Tests must be conducted in California (8%), New York (3%) and Wisconsin (12%) which collectively comprised about 50% of the 1985 U.S. alfalfa production if Wisconsin is representative of Iowa (7%), Michigan (6%), Minnesota (7%) and Nebraska (6%) and if New York is representative of Pennsylvania (3%), (Agricultural Statistics, 1986, p. 242).

63/ Data depicting residues of mevinphos alpha and beta isomers in or on birdsfoot trefoil forage and hay (about 10% moisture content) following multiple foliar applications of the 4 lb/gal EC formulation at 0.5 lb ai/A, using ground and aerial equipment in separate tests. The registrant must propose a maximum number of applications per season or a maximum seasonal application rate. The required tests must reflect this number or maximum rate. Tests must be conducted in New York in which this use is permitted. Alternatively, the registrant may elect to cancel this use permitted under EPA SLN No. NY810002.

64/ The registrant must propose an appropriate tolerance for mevinphos residues of concern in or on clover hay based on the data requested for alfalfa hay.

65/ Data depicting mevinphos residues of concern in or on artichokes harvested 2 days after the last of multiple foliar applications (using ground and aerial equipment in separate tests) of the 2% D formulation at 0.25 lb ai/A, and an EC and the 10.3 lb/gal SC/L formulation (each in a separate test) at 1 lb ai/A. The registrant must propose a maximum seasonal use rate or a maximum number of applications per season. The requested data must reflect this maximum. Tests must be conducted in California which accounted for about 100% of the 1982 U.S. artichoke acreage (1982 Census of Agriculture, Vol. 1, Part 51, p. 335).

TABLE A
GENERIC DATA REQUIREMENTS FOR MEVINPHOS

Sec. 158.125 Residue Chemistry - Footnotes (cont'd)

66/ Data depicting mevinphos residues of concern in or on okra harvested 1 day after the last of multiple foliar applications (using both aerial and ground equipment in separate tests) of an EC and a SC/L formulation at 0.5 lb ai/A in separate tests. Ground applications must be made in a minimum of 10 gal/A and aerial applications must be made in a minimum of 3 gal/A. The registrant must propose a maximum number of applications per season or a maximum seasonal use rate. The requested data must reflect the maximum rate. Tests must be conducted in Georgia (20%) and Texas (29%) which collectively accounted for about 50% of the 1982 U.S. okra acreage if Georgia is representative of Florida (9%), (1982 Census of Agriculture, Vol. 1, Part 51, p. 347-348).

67/ Data depicting mevinphos residues of concern in or on watercress harvested 1 day following the last of five foliar applications (using ground equipment in a minimum of 25 gal/A) at 2-day intervals of the 4 lb/gal EC formulation at 0.5 lb ai/A. Tests must be conducted in Alabama and Maryland, Pennsylvania, or West Virginia. Alternatively, the registrant may elect to cancel this use permitted under EPA SLN Numbers AL850007, FL840025, MD850001, PA850003 and WV850002.

68/ Data depicting mevinphos residues of concern in or on Bermuda grass and seed harvested 7 days following the last of multiple foliar applications of the 4 lb/gal EC formulation at 1 lb ai/A using both ground and aerial equipment in separate tests. The registrant must propose a maximum number of applications per season or a maximum seasonal use rate. The required data must reflect these proposals. Alternatively, the registrant may elect to cancel this use permitted under EPA SLN Number AZ790033.

69/ Data depicting mevinphos residues of concern in or on sesame and sesame seed harvested following the last of multiple foliar applications of the 4 lb/gal SC/L formulation at 0.5 lb ai/A using aerial equipment in a minimum of 5 gal/A. The registrant must propose a maximum number of applications per season and a pre-harvest interval (PHI). The requested data must reflect these proposals. Alternatively, the registrant may elect to cancel this use permitted under EPA SLN Number CA760180.

70/ Presently, the nature of the residues in animals is not adequately understood. Upon receipt of the data requested in the section "Nature and Residue in Animals", the need for, and the nature of tolerances for mevinphos residues in livestock and poultry will be assessed.

TABLE A
GENERIC DATA REQUIREMENTS FOR MEVINPHOS

Data Requirement	Test Substance[1]/	Use Patterns[2]/	Does EPA Have Data?	Bibliographic Citation (MRID)	Must Additional Data Be Submitted?	Timeframe for Submission[3]/
Sec. 158.130 Environmental Fate						
Degradation Studies - Lab						
161-1 - Hydrolysis	TGAI or PAIRA	A B C D E	No		Yes	9 Months
Photodegradation						
161-2 - In Water	TGAI or PAIRA	A B C D	No		Yes	9 Months
161-3 - On Soil	TGAI or PAIRA	A	No		Yes	9 Months
161-4 - In Air	TGAI or PAIRA	A	No		Yes	9 Months
Metabolism studies - Lab						
162-1 - Aerobic Soil	TGAI or PAIRA	A B E	No		Yes	27 Months
162-2 - Anaerobic Soil	TGAI or PAIRA	A	No		Yes	27 Months
162-3 - Anaerobic Aquatic	TGAI or PAIRA	C D	No		Yes	27 Months
162-4 - Aerobic Aquatic	TGAI or PAIRA	C D	No		Yes	27 Months
Mobility Studies						
163-1 - Leaching and Adsorption/ Desorption	TGAI or PAIRA	A B C D E	Partially	40157101	Yes[4]/	12 Months
163-2 - Volatility (Lab)	TEP	A E	No		Yes	12 Months
163-3 - Volatility (Field)	TEP	A E	No		Reserved[5]/	---

TABLE A
GENERIC DATA REQUIREMENTS FOR MEVINPHOS

Data Requirement	Test Substance[1]/	Use Patterns[2]/	Does EPA Have Data?	Bibliographic Citation (MRID)	Must Additional Data Be Submitted?	Timeframe for Submission[3]/
Sec. 158.130 Environmental Fate						
Dissipation Studies - Field						
164-1 - Soil	TEP	A B	No		Yes	27 Months
164-2 - Aquatic (Sediment)	TEP	C D	No		Yes	27 Months
164-3 - Forestry	TEP	N/A	No		No[6]/	---
164-4 - Combination and Tank Mixes	TEP	N/A	No		No[7]/	---
164-5 - Soil, Long-Term	TEP	A C	No		Reserved[8]/	---
Accumulation Studies						
165-1 - Rotational Crops (Confined)	PAIRA	A C	No		Yes	39 Months
165-2 - Rotational Crops (Field)	TEP	A C	No		Yes[9]/	---
165-3 - Irrigated Crops	TEP	C D	No		Reserved[10]/	---
165-4 - In Fish	TGAI or PAIRA	A B C D	No		Yes	12 Months
165-5 - In Aquatic Nontarget	TEP	D	No		Yes[11]/	12 Months

TABLE A
GENERIC DATA REQUIREMENTS FOR MEVINPHOS

Data Requirement	Test Substance[1]/	Use Patterns[2]/	Does EPA Have Data?	Bibliographic Citation (MRID)	Must Additional Data Be Submitted?	Timeframe for Submission[3]/
Sec. 158.140 Reentry Protection						
132-1 - Foliar Dissipation	TEP	A B C D E	Yes	00147424	No	---
132-2 - Soil Dissipation	TEP	A B C D E	Yes	00147424	No	---
132-3 - Dermal Exposure	TEP	A B C D E	Yes	00147424	No	---
132-4 - Inhalation Exposure	TEP	A B C D E	Yes	00147424	No	---
Sec. 158.142 Spray Drift						
201-1 - Droplet Size Spectrum	TEP	A B C D E	No		Yes	14 Months
202-1 - Drift Field Evaluation	TEP	A B C D E	No		Yes	14 Months
Sec. 158.75 Special Testing						
- Applicator Exposure	TEP	A B C D E	No		Reserved[12]/	---

TABLE A
GENERIC DATA REQUIREMENTS FOR MEVINPHOS

Sec. 158.130 Environmental Fate - Footnotes
Sec. 158.140 Reentry Protection - Footnotes
Sec. 158.142 Spray Drift - Footnotes
Sec. 158.75 Special Testing - Footnotes

1/ Test Substance: TGAI - Technical Grade of the Active Ingredient; PAIRA - Pure Active Ingredient, Radiolabeled; TEP - Typical End-Use Product

2/ The use patterns are coded as follows: A = Terrestrial, Food Crop; B = Terrestrial, Non-Food; C = Aquatic, Food Crop; D = Aquatic, Non-Food; E = Greenhouse, Food Crop; F = Greenhouse, Non-Food; G = Forestry; H = Domestic Outdoor; I = Indoor; N/A = Not Applicable.

3/ Due dates refer to the number of months following the registrant's receipt of this Registration Standard, unless otherwise indicated.

4/ Acceptable data are needed to provide information on the mobility of aged mevinphos residue in soil.

5/ Field volatility requirement conditional on results of the laboratory study (field volatility requirement is reserved until acceptable laboratory data are received). If required, the field volatility study will be due within 15 months after notification of requirement by the Agency.

6/ There are no forestry uses currently registered for mevinphos.

7/ Combination and tank mixes are not being addressed in this Standard.

8/ Long-term field dissipation studies are conditional on results of the field dissipation study (164-1). The long-term field dissipation study will be required if the residues of mevinphos and/or its major toxic degradate(s) do not reach <50 per cent dissipation in soil prior to recommended subsequent application of mevinphos to the same sites utilized for the field dissipation study. If required, the long-term field dissipation study will be due within 50 months after notification or the requirement by the Agency.

9/ Field crop rotation data are conditional on results of the confined study (the field crop rotation requirement is reserved until acceptable confined data are received). If required, the field crop rotation study will be due within 50 months after notification of the requirement by the Agency.

TABLE A
GENERIC DATA REQUIREMENTS FOR MEVINPHOS

Sec. 158.130 Environmental Fate - Footnotes (continued)
Sec. 158.140 Reentry Protection - Footnotes
Sec. 158.142 Spray Drift - Footnotes
Sec. 158.75 Special Testing - Footnotes

10/ Irrigated crop data are conditional on results of the laboratory fish accumulation study (the irrigated crop requirement is reserved until acceptable laboratory fish accumulation data re received). If required, the irrigated crop study will be due within 39 months after notification of the requirement by the Agency.

11/ An aquatic nontarget accumulation study is required if the water at the treated site is used for irrigation purposes.

12/ Applicator exposure monitoring data may be needed after the Agency establishes the toxicological category of mevinphos. If required, the study will be due within 24 months after notification of requirement by the Agency.

TABLE A
GENERIC DATA REQUIREMENTS FOR MEVINPHOS

Data Requirement	Test Substance[1]/	Use Patterns[2]/	Does EPA Have Data?	Bibliographic Citation (MRID)	Must Additional Data Be Submitted?	Timeframe for Submission[3]/
Sec. 158.135 Toxicology						
Acute Testing						
81-1 - Acute Oral - Rat	TGAI	A B C D E	No		Yes	3/15/88[4]/
81-2 - Acute Dermal	TGAI	A B C D E	No		Yes	3/15/88[4]/
81-3 - Acute Inhalation - Rat	TGAI	A B C D E	No		Yes	3/15/88[4]/
81-4 - Eye Irritation - Rabbit	TGAI	A B C D E	No		Yes	3/15/88[4]/
81-5 - Dermal Irritation - Rabbit	TGAI	A B C D E	No		Yes	3/15/88[4]/
81-6 - Dermal Sensitization - Guinea Pig	TGAI	A B C D E	No		Yes	3/15/88[4]/
81-7 - Acute Delayed Neurotoxicity - Hen	TGAI	A B C D E	No		Yes	6/15/88[5]/
Special-Testing Acute Dermal/ChE	TGAI	A B C D E	No		Yes[6]/	6 Months
Subchronic Testing						
82-1 - 90-Day Feeding -						
- Rodent	TGAI	A B C D E	No		No[7]/	---
- Nonrodent	TGAI	A B C D E	No		No[7]/	---
82-2 - 21-Day Dermal	TGAI	A B C D E	No		Yes	12 Months
82-3 - 90-Day Dermal	TGAI	A B C D E	No		No[8]/	---

TABLE A
GENERIC DATA REQUIREMENTS FOR MEVINPHOS

Data Requirement	Test Substance[1]/	Use Patterns[2]/	Does EPA Have Data?	Bibliographic Citation (MRID)	Must Additional Data Be Submitted?	Timeframe for Submission[3]/
Sec. 158.135 Toxicology (cont'd)						
Subchronic Testing (cont'd)						
82-4 - 90-Day Inhalation	TGAI	A B C D E	No		Yes[9]/	15 Months
82-5 - 90-Day Neurotoxicity -						
- Hen	TGAI	A B C D E	No		Yes[10]/	---
- Mammal	TGAI	A B C D E	No		Yes[11]/	---
Chronic Testing						
83-1 - Chronic Toxicity -						
- Rodent	TGAI	A B C D E	No		Yes	50 Months
- Nonrodent	TGAI	A B C D E	No		Yes	50 Months
83-2 - Oncogenicity -						
- Rat	TGAI	A B C D E	No		Yes	50 Months
- Mouse	TGAI	A B C D E	No		Yes	50 Months
83-3 - Teratogenicity -						
- Rat	TGAI	A B C D E	Yes	40201401	No	---
- Rabbit	TGAI	A B C D E	No		Yes	15 Months
83-4 - Reproduction	TGAI	A B C D E	No		Yes	39 Months

TABLE A
GENERIC DATA REQUIREMENTS FOR MEVINPHOS

Data Requirement	Test Substance[1]/	Use Patterns[2]/	Does EPA Have Data?	Bibliographic Citation (MRID)	Must Additional Data Be Submitted?	Timeframe for Submission[3]/
Sec. 158.135 Toxicology (cont'd)						
Mutagenicity Testing						
84-2 - Gene Mutation	TGAI	A B C D E	No		Yes	9 Months
84-2 - Chromosome Aberration	TGAI	A B C D E	No		Yes	12 Months
84-2 - Other Mechanism of Mutagenicity	TGAI	A B C D E	No		Yes	12 Months
Special Testing						
85-1 - General Metabolism	PAI or PAIRA	A B C D E	No		Yes	24 Months
85-2 - Dermal Penetration	PAI or PAIRA	A B C D E	No		Yes	6/15/88[5]/

TABLE A
GENERIC DATA REQUIREMENTS FOR MEVINPHOS

Sec. 158.135 Toxicology - Footnotes

1/ Test Substance: TGAI - Technical Grade of the Active Ingredient; PAIRA - Pure Active Ingredient, Radiolabeled; TEP - Typical End-Use Product

2/ The use patterns are coded as follows: A = Terrestrial, Food Crop; B = Terrestrial, Non-Food; C = Aquatic, Food Crop; D = Aquatic, Non-Food; E = Greenhouse, Food Crop; F = Greenhouse, Non-Food; G = Forestry; H = Domestic Outdoor; I = Indoor; N/A = Not Applicable.

3/ Due dates refer to the number of months following the registrant's receipt of this Registration Standard, unless otherwise indicated.

4/ The Agency's Data Call-In Notice of September 9, 1987 established the due date for this study as March 15, 1988.

5/ The Agency's Data Call-In Notice of September 9, 1987 established the due date for this study as June 15, 1988.

6/ An Acute Dermal Toxicity study is required which defines NOELs for cholinesterase inhibition (ChE), toxicity, and lethality. The most sensitive sex, as determined in the guideline acute dermal toxicity study, is to be used in this study.

7/ This requirement is waived since chronic studies are required.

8/ Not required because of the nature of the exposure pattern. (The existing acceptable end-uses do not involve purposeful application to human skin or comparaable human exposure to the product and should not result in repeated human skin contact for extended periods.)

9/ Required to support use of mevinphos in greenhouses.

10/ Requirement is contingent upon results of the acute delayed neurotoxicity study in hens. If required, the study will be due within 15 months after notification of requirement by the Agency.

11/ If neurotoxic lesions are found in mammalian studies, a subchronic neurotoxicity study in mammals may be required. If required, the study will be due within 15 months after notification of requirement by the Agency.

TABLE A
GENERIC DATA REQUIREMENTS FOR MEVINPHOS

Data Requirement	Test Substance[1]/	Use Patterns[2]/	Does EPA Have Data?	Bibliographic Citation (MRID)	Must Additional Data Be Submitted?	Timeframe for Submission[3]/
Sec. 158.145 Wildlife and Aquatic Organisms						
Avian And Mammalian Testing						
71-1 - Avian Acute Oral Toxicity						
- Waterfowl	TGAI	A B C D [E][4]/	Yes	40094601	No	---
- Songbird	TGAI	A B	No		Reserved[5]/	---
71-2 - Avian Subacute Dietary Toxicity						
- Upland game bird	TGAI	A B C D [E][4]/	Yes	00022923	No	---
- Waterfowl	TGAI	A B C E	Yes	00022923	No	---
- Songbird	TGAI	A B	No		Reserved[5]/	---
71-3 - Wild Mammal Toxicity	TGAI	A B C	No		Yes[6]/	24 Months
71-4 - Avian Reproduction						
- Upland game bird	TGAI	A B C	No		Yes[7]/	24 Months
- Waterfowl	TGAI	A B C	No		Yes[7]/	24 Months
71-5 - Simulated and Actual Field Testing for Mammals and Birds	TGAI	A B C	No		Reserved[8]/	24 Months
70-1 - Special Testing - Residue Monitoring	TEP	A	No		Yes[9]/	24 Months

TABLE A
GENERIC DATA REQUIREMENTS FOR MEVINPHOS

Data Requirement	Test Substance[1]/	Use Patterns[2]/	Does EPA Have Data?	Bibliographic Citation (MRID)	Must Additional Data Be Submitted?	Timeframe for Submission[3]/
Sec. 158.145 Wildlife and Aquatic Organisms (cont'd)						
Aquatic Organisms Testing						
72-1 - Freshwater Fish Toxicity Toxicity						
- Warmwater	TGAI	A B C D	Yes	40098001	No	---
	TEP	A C D	No		Yes[10]/	9 Months
- Coldwater	TGAI	A B C D [E][4]/	Yes	40098001	No	---
	TEP	A C D	No		Yes[10]/	9 Months
72-2 - Acute Toxicity to Freshwater Invertebrates	TGAI	A B C D [E][4]/	Yes	40098001	No	---
	TEP	A C D	No		Yes[10]/	9 Months
72-3 - Acute Toxicity to Estuarine and Marine Organisms						
- Fish	TGAI	A C D	No		Yes[11]/	12 Months
	TEP	A C D	No		Reserved[12]/	---
- Shrimp	TGAI	A C D	No		Yes[11]/	12 Months
	TEP	A C D	No		Reserved[12]/	---
- Oyster	TGAI	A C D	Yes	40228401	No	---
	TEP	A C D	No		Reserved[12]/	---

TABLE A
GENERIC DATA REQUIREMENTS FOR MEVINPHOS

Data Requirement	Test Substance[1]/	Use Patterns[2]/	Does EPA Have Data?	Bibliographic Citation (MRID)	Must Additional Data Be Submitted?	Timeframe for Submission[3]/
Sec. 158.145 Wildlife and Aquatic Organisms (cont'd)						
Aquatic Organisms Testing (cont'd)						
72-4 - Fish Early Life Stage and Aquatic Invertebrate Life Cycle						
- Fish	TGAI	A B C D	No		Yes[13]/	15 Months
- Invertebrates	TGAI	A B C D	No		Yes[13]/	15 Months
72-5 - Fish Life Cycle	TGAI	A B C D	No		Reserved[14]/	---
72-6 - Aquatic Organism Accumulation	TGAI	A B C D	No		Yes	12 Months
72-7 - Simulated or Actual Field Testing						
- Aquatic Organisms	TEP	A B C D	No		Reserved[15]/	---
70-1 - Special Testing						
- Aquatic Residue Monitoring	TEP	A B C E	No		Reserved[16]/	---

TABLE A
GENERIC DATA REQUIREMENTS FOR MEVINPHOS

Sec. 158.145 Wildlife and Aquatic Organisms - Footnotes

1/TGAI = Technical Grade of the Active Ingredient; TEP = Typical End-Use Product.

2/The use patterns are coded as follows: A = Terrestrial, Food Crop; B = Terrestrial, Nonfood; C = Aquatic, Food Crop; D = Aquatic, Nonfood; E = Greenhouse, Food Crop; F = Greenhouse, Nonfood; G = Forestry; H = Domestic outdoor; I = Indoor.

3/Due dates refer to the number of months following the registrant's receipt of this Registration Standard, unless otherwise indicated.

4/Required to support manufacturing-use product for reformulation into end-use product.

5/Reserved pending the results of the terrestrial monitoring study on avian food items. If required, study will be due within 9 months after notification of requirement by the Agency.

6/This is a five-day dietary toxicity test with a species of wild mammal. The recommended species is Peromyscus maniculatus or Peromyscus leucopus.

7/Required because the label allows repeat applications for all uses.

8/Reserved pending the results of the terrestrial residue monitoring study. If required, study will be due within 24 months after notification of requirement by the Agency.

9/Terrestrial residue monitoring studies are required for the following use sites: alfalfa, apple, and Bermuda grass grown for seed. Avian and mammalian food items such as forage, insects, and seeds should be sampled.

10/Required to support aquatic food crop use because the pesticide is applied directly to water. Also required to support all other outdoor crop uses because the EEC exceeds the LC_{50} of the technical material to aquatic organisms (fish or freshwater invertebrates).

11/Required to support use on corn, sorghum, and citrus because of potential exposure of estuarine/marine environments through runoff, drainage, and drift.

12/Reserved pending the results of acute toxicity testing with technical mevinphos on marine/estuarine organisms. If required, study will be due within 12 months after notification of requirement by the Agency.

13/Required to support all outdoor crop uses because the acute toxicity of technical mevinphos is less than 1 mg/L (ppm) to aquatic organisms (fish and aquatic invertebrates) and the EECs exceed 0.01 of the LC_{50}/EC_{50}.

TABLE A
GENERIC DATA REQUIREMENTS FOR MEVINPHOS

Sec. 158.145 Wildlife and Aquatic Organisms - Footnotes

[14]/Reserved pending the results of fish early life stage and aquatic invertebrate life cycle tests. If required, study will be due within 27 months after notification of requirement by the Agency.

[15]/Reserved pending results of aquatic residue monitoring study (if required). If required, the simulated or actual field testing for aquatic organisms will be due within 24 months after notification of requirement by the Agency.

[16]/Pending the results of the required environmental fate data, aquatic residue monitoring data may be required for the following use sites: artichoke, watercress, and sewage treatment. If required, acceptable protocols must be submitted within 6 months after notification of requirement by the Agency. The study is due within 12 months after notification by the Agency that the protocol is acceptable.

TABLE A
GENERIC DATA REQUIREMENTS FOR MEVINPHOS

Data Requirement	Test Substance[1]/	Use Patterns[2]/	Does EPA Have Data?	Bibliographic Citation (MRID)	Must Additional Data Be Submitted?	Timeframe for Submission[3]/
Sec. 158.155 Nontarget Insects						
NONTARGET INSECT TESTING - POLLINATORS						
141-1 - Honeybee Acute Contact Toxicity	TGAI	A B	Yes	05004151	No	---
141-2 - Honeybee - Toxicity of Residues on Foliage	TEP	A B	No		Yes[4]/	15 Months
141-4 - Honeybee Subacute Feeding Study	Reserved[5]/	- -	-		-	---
141-5 - Field Testing for Pollinators	TEP	A B	No		No[6]/	
NONTARGET INSECT TESTING - AQUATIC INSECTS						
142-1 - Acute Toxicity to Aquatic Insects	Reserved[7]/	- -	-		-	---
142-2 - Aquatic Insect Life-cycle Study	Reserved[7]/	- -	-		-	---
142-3 - Simulated or Actual Field Testing for Aquatic Insects	Reserved[7]/	- -	-		-	---
NONTARGET INSECT TESTING - PREDATORS AND PARASITES						
143-1 thru 143-3 -	Reserved[7]/	- -	-		-	---

TABLE A
GENERIC DATA REQUIREMENTS FOR MEVINPHOS

Sec. 158.155 Nontarget Insects - Footnotes

1/Test substance: TGAI = Technical Grade of the Active Ingredient; TEP = Typical End-Use Product.

2/The use patterns are coded as follows: A = Terrestrial, Food Crop; B = Terrestrial, Nonfood; C = Aquatic, Food Crop; D = Aquatic, Nonfood; E = Greenhouse, Food Crop; F = Greenhouse, Nonfood; G = Forestry; H = Domestic, outdoor; I = Indoor.

3/Due dates refer to the number of months following the registrant's receipt of this Registration Standard, unless otherwise indicated.

4/Residual toxicity data are required because data from the acute test indicate high toxicity.

5/Reserved pending development of test methodology.

6/Data reviewed to date do not indicate the need for field testing.

7/Reserved pending Agency decision as to whether the data requirement should be established.

TABLE B
PRODUCT-SPECIFIC DATA REQUIREMENTS FOR MANUFACTURING-USE PRODUCTS CONTAINING MEVINPHOS

Data Requirement	Test Substance[1]/	Use Patterns	Does EPA Have Data?	Bibliographic Citation (MRID)	Must Additional Data Be Submitted?	Timeframe for Submission[2]/
Sec. 158.120 Product Chemistry						
Product Identity and Composition						
61-1 - Product Identity and Disclosure of Ingredients	MP	All	[3]/	[3]/	Yes[4]/	6 Months
61-2 - Description of Beginning Materials and Manufacturing Process	MP	All	[3]/	[3]/	Yes[5]/	6 Months
61-3 - Discussion of Formation of Impurities	MP	All	[3]/	[3]/	Yes[6]/	6 Months
Analysis and Certification of Product Ingredients						
62-1 - Preliminary Analysis of Product Samples	MP	All	[3]/	[3]/	Yes[7]/	12 Months
62-2 - Certification of Ingredient Limits	MP	All	[3]/	[3]/	Yes[8]/	12 Months
62-3 - Analytical Methods to Verify Certified Limits	MP	All	[3]/	[3]/	Yes[9]/	12 Months
Physical and Chemical Characteristics						
63-2 - Color	MP	All	[3]/	[3]/	Yes[10]/	6 Months
63-3 - Physical State	MP	All	[3]/	[3]/	Yes[7]/	6 Months
63-4 - Odor	MP	All	[3]/	[3]/	Yes[7]/	6 Months

TABLE B
PRODUCT-SPECIFIC DATA REQUIREMENTS FOR MANUFACTURING-USE PRODUCTS CONTAINING MEVINPHOS

Data Requirement	Test Substance[1]/	Use Patterns	Does EPA Have Data?	Bibliographic Citation (MRID)	Must Additional Data Be Submitted?	Timeframe for Submission[2]/
Sec. 158.120 Product Chemistry (cont'd)						
Physical and Chemical Characteristics (cont'd)						
63-7 - Density, Bulk Density, or Specific Gravity	MP	All	[3]/	[3]/	Yes[7]/	6 Months
63-12 - pH	MP	All	[3]/	[3]/	Yes[7]/[11]/	6 Months
63-14 - Oxidizing or Reducing Action	MP	All	[3]/	[3]/	Yes[10]/[12]/	6 Months
63-15 - Flammability	MP	All	[3]/	[3]/	Yes[10]/[13]/	6 Months
63-16 - Explodability	MP	All	[3]/	[3]/	Yes[10]/[14]/	6 Months
63-17 - Storage Stability	MP	All	[3]/	[3]/	Yes[10]/	15 Months
63-18 - Viscosity	MP	All	[3]/	[3]/	Yes[10]/[15]/	6 Months
63-19 - Miscibility	MP	All	[3]/	[3]/	Yes[10]/[16]/	6 Months
63-20 - Corrosion Characteristics	MP	All	[3]/	[3]/	Yes[10]/	15 Months
Other Requirements:						
64-1 - Submittal of Samples	N/A	N/A	N/A	N/A	No	-----

TABLE B
PRODUCT-SPECIFIC DATA REQUIREMENTS FOR MANUFACTURING-USE PRODUCTS CONTAINING MEVINPHOS

Sec. 158.120 Product Chemistry - Footnotes

1/ Test Substance: MP - Manufacturing-Use Product.

2/ Due dates refer to the number of months following the registrant's receipt of this Registration Standard, unless otherwise indicated.

3/ Although product chemistry may have been submitted in the past, the Agency has determined that these data must be resubmitted for each pesticide. New data requirements have been introduced and previously submitted data must be updated. Therefore, bibliographic citations for the old data are not applicable.

4/ The chemical name and nominal concentration of each impurity for which a certified limit is required must be submitted. In addition, the chemical name, nominal concentration, Chemical Abstracts (CAS) Registry Number, and purpose of the active ingredient and each intentionally added inert must be provided. For the active ingredients, the following must also be provided: the product, common, and trade names; the molecular, structural, and empirical formulas; the molecular weight or weight range; and any experimental or internally assigned company code numbers.

5/ Complete information must be provided regarding the nature of the process (batch or continuous), the relative amounts of beginning materials and the order in which they are added, the chemical equations for each intended reaction, equipment used to produce each intermediate and the final product, reaction conditions, the duration of each step of the process, purification procedures, and quality control measures. In addition, the name and address of the manufacturer, producer, or supplier of each beginning material must be provided, along with information regarding the properties of those materials.

6/ A detailed discussion of all impurities that are or may be present at $\geq$0.1%, based on knowledge of the beginning materials, chemical reactions (intended and side) in the manufacturing process, and any contamination during and after production must be submitted.

7/ Five or more representative samples must be analyzed for the amount of active ingredient and each impurity for which a certified limit is required. Complete validation data (accuracy, precision) must be submitted for each analytical method used.

TABLE B
PRODUCT-SPECIFIC DATA REQUIREMENTS FOR MANUFACTURING-USE PRODUCTS CONTAINING MEVINPHOS

Sec. 158.120 Product Chemistry - Footnotes

8/ Upper and lower limits for the active ingredient and each intentionally added inert, and upper limits for each impurity present at >0.1% (w/w) and each "toxicologically significant" impurity present at <0.1% (w/w) must be provided, certified, and validated by sample analysis using analytical procedures for which accuracy and precision data have been provided. Limits for impurities not associated with the active ingredient need be provided only if they are considered to be of toxicological significance, regardless of the concentration at which they are present. Certifications must be submitted on EPA Form 8570 Rev. 2-85.

9/ Analytical methods must be provided to determine the active ingredient, and each toxicologically significant impurity and intentionally added inert for which certified limits are required. Each method must be accompanied by validation studies indicating its accuracy and precision. These methods must be suitable for enforcement of certified limits.

10/ Physicochemical characteristics (color, physical state, odor, melting point, boiling point, specific gravity, solubility, vapor pressure, dissociation constant, partition coefficient, pH, and stability) as required in 40 CFR 158.120 and more fully described in the Pesticide Assessment Guidelines, Subdivision D, must be submitted.

11/ Data required if the test substance is dispersible in water.

12/ Data required if the product contains an oxidizing or reducing agent.

13/ Data required if the product contains combustible liquids.

14/ Data required if the product is potentially explosive.

15/ Data required if the product is a liquid.

16/ Data required if the product is a liquid and is to be diluted with petroleum solvents.

TABLE B
PRODUCT-SPECIFIC DATA REQUIREMENTS FOR MANUFACTURING-USE PRODUCTS CONTAINING MEVINPHOS

Data Requirement	Test Substance[1]/	Use Patterns[2]/	Does EPA Have Data?	Bibliographic Citation (MRID)	Must Additional Data Be Submitted?	Timeframe for Submission[3]/
Sec. 158.135 Toxicology						
Acute Testing						
81-1 - Acute Oral - Rat	MP	A B C D E	No		Yes	9 Months
81-2 - Acute Dermal	MP	A B C D E	No		Yes	9 Months
81-3 - Acute Inhalation - Rat	MP	A B C D E	No		Yes	9 Months
81-4 - Eye Irritation - Rabbit	MP	A B C D E	No		Yes	9 Months
81-5 - Dermal Irritation - Rabbit	MP	A B C D E	No		Yes	9 Months
81-6 - Dermal Sensitization - Guinea Pig	MP	A B C D E	No		Yes	9 Months
81-7 - Acute Delayed Neurotoxicity - Hen	MP	A B C D E	No		Yes	12 Months

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Footnotes:

[1]/ Test material: MP = Manufacturing-Use Product.

[2]/ The use patterns are coded as follows: A = Terrestrial, Food Crop; B = Terrestrial, Nonfood; C = Aquatic, Food Crop; D = Aquatic, Nonfood; E = Greenhouse, Food Crop; F = Greenhouse, Nonfood; G = Forestry; H = Domestic, outdoor; I = Indoor.

[3]/ Due dates refer to the number of months following the registrant's receipt of this Registration Standard, unless otherwise indicated.

II. LABELING APPENDICES

SUMMARY-1

LABEL CONTENTS

40 CFR 162.10 requires that certain specific labeling statements appear at certain locations on the label. This is referred to as format labeling. Specific label items listed below are keyed to the table at the end of this Appendix.

Item 1. PRODUCT NAME - The name, brand or trademark is required to be located on the front panel, preferably centered in the upper part of the panel. The name of a product will not be accepted if it is false or misleading.

Item 2. COMPANY NAME AND ADDRESS - The name and address of the registrant or distributor is required on the label. The name and address should preferably be located at the bottom of the front panel or at the end of the label text.

Item 3. NET CONTENTS - A net contents statement is required on all labels or on the container of the pesticide. The preferred location is the bottom of the front panel immediately above the company name and address, or at the end of the label test. The net contents must be expressed in the largest suitable unit, e.g., "1 pound 10 ounces" rather than "26 ounces." In addition to English units, net contents may be expressed in metric units. [40 CFR 162.10(d)]

Item 4. EPA REGISTRATION NUMBER - The registration number assigned to the pesticide product must appear on the label, preceded by the phrase "EPA Registration No.," or "EPA Reg. No." The registration number must be set in type of a size and style similar to other print on that part of the label on which it appears and must run parallel to it. The registration number and the required identifying phrase must not appear in such a manner as to suggest or imply recommendation or endorsement of the product by the Agency. [40 CFR 162.10(e)]

Item 5. EPA ESTABLISHMENT NUMBER - The EPA establishment number, preceded by the phrase "EPA Est." is the final estabment at which the product was produced, and may appear in any suitable location on the label or immediate container. It must also appear on the wrapper or outside container of the package if the EPA establishment number on the immediate container cannot be clearly read through such wrapper or container.
[40 CFR 162.10(f)]

SUMMARY-2

Item 6A. INGREDIENTS STATEMENT - An ingredients statement is required on the front panel. The ingredients statement must contain the name and percentage by weight of each active ingredient and the total percentage by weight of all inert ingredients. The preferred location is immediately below the product name. The ingredients statement must run parallel with, and be clearly distinguished from, other text on the panel. It must not be placed in the body of other text. [40 CFR 162.10(g)]

Item 6B. POUNDS PER GALLON STATEMENT - For liquid agricultural formulations, the pounds per gallon of active ingredient must be indicated on the label.

Item 7. FRONT LABEL PRECAUTIONARY STATEMENTS - Front panel precautionary statements must be grouped together, preferably within a block outline. The table below shows the minimum type size requirements for various size labels.

Size of Label on Front Panel in Square Inches	Signal Word Minimum Type Size All Capitals	"Keep Out of Reach of Children" Minimum Type Size
5 and under	6 point	6 point
above 5 to 10	10 point	6 point
above 10 to 15	12 point	8 point
above 15 to 30	14 point	10 point
over 30	18 point	12 point

Item 7A. CHILD HAZARD WARNING STATEMENT - The statement "Keep Out of Reach of Children" must be located on the front panel above the signal word except where contact with children during distribution or use is unlikely. [40 CFR 162.10(h)(1)(ii)]

Item 7B. SIGNAL WORD - The signal word (DANGER, WARNING, or CAUTION) is required on the front panel immediately below the child hazard warning statement. [40CFR 162.10(h)(1)(i)]

Item 7C. SKULL & CROSSBONES AND WORD "POISON" - On products assigned a toxicity Category I on the basis of oral, dermal, or inhalation toxicity, the word "Poison" shall appear on the label in red on a background of distinctly contrasting color and the skull and crossbones shall appear in immediate proximity to the word POISON. [40 CFR 162.10(h)(1)(i)

Item 7D. STATEMENT OF PRACTICAL TREATMENT - A statement of practical treatment (first aid or other) shall appear on the label of pesticide products in toxicity Categories I, II, and III. [40 CFR 162.10(h)(1)(iii)]

Item 7E. REFERRAL STATEMENT - The statement "see Side (or Back) Panel for Additional Precautionary Statements" is required on the front panel for all products, unless all required precautionary statements appear on the front panel. [40 CFR 162.10(h)(1)(iii)]

Item 8. SIDE/BACK PANEL PRECAUTIONARY LABELING - The precautionary statements listed below must appear together on the label under the heading "PRECAUTIONARY STATEMENTS." The preferred location is at the top of the side or back panel preceding the directions for use, and it is preferred that these statements be surrounded by a block outline. Each of the three hazard warning statements must be headed by the appropriate hazard title. [40 CFR 162.10(h)(2)]

Item 8A. HAZARD TO HUMANS AND DOMESTIC ANIMALS - Where a hazard exists to humans or domestic animals, precautionary statements are required indicating the particular hazard, the route(s) of exposure and the precautions to be taken to avoid accident, injury or damage. [40 CFR 162.10(h)(2)(i)]

Item 8B. ENVIRONMENTAL HAZARD - Where a hazard exists to non-target organisms excluding humans and domestic animals, precautionary statements are required stating the nature of the hazard and the appropriate precautions to avoid potential accident, injury, or damage. [40 CFR 162.10(h)(2)(ii)]

Item 8C. PHYSICAL OR CHEMICAL HAZARD - FLAMMABILITY Precautionary statements relating to flammability of a product are required to appear on the label if it meets the criteria in the PHYS/CHEM Labeling Appendix. The requirement is based on the results of the flashpoint determinations and flame extension tests required to be submitted for all products. These statements are to be located in the side/back panel precautionary statements section, preceded by the heading "Physical/Chemical Hazards." Note that no signal word is used in conjunction with the flammability statements.

Item 9A. RESTRICTED USE CLASSIFICATION - FIFRA sec. 3(d) requires that all pesticide formulations/uses be classified for either general or restricted use. Products classified for restricted use may be limited to use by certified applicators or persons under their direct supervision (or may be subject to other restrictions that may be imposed by regulation).

In the Registration Standard, the Agency has (1) indicated certain formulations/uses are to be restricted (Section IV indicates why the product has been classified for restricted use); or (2) reserved any classification decision until appropriate data are submitted.

The Regulatory Position and Rationale states whether products containing this active ingredient are classified for restricted use. If they are restricted the draft label(s) submitted to the Agency as part of your application must reflect this determination (see below).

If you do not believe that your product should be classified for restricted use, you must submit any information and rationale with your application for reregistration. During the Agency's review of your application, your proposed classification determination will be evaluated in accordance with the provisions of 40 CFR 162.11(c). You will be notified of the Agency's classification decision.

Classification Labeling Requirements

If your product has been classified for restricted use, the following label requirements apply:

1. All uses restricted.

   a. The statement "Restricted Use Pesticide" must appear at the top of the front panel of the label. The statement must be set in type of the same minimum size as required for human hazard signal word (see table in 40 CFR 162.10(h)(1)(iv).

   b. Directly below this statement on the front panel, a summary statement of the terms of restriction must appear (including the reasons for restriction if specified in Section I). If use is restricted to certified applicators, the following statement is required: "For retail sale to and use only by Certified Applicators or persons under their direct supervision and only for those uses covered by the Certified Applicator's Certification."

2. Some but not all uses restricted. If the Regulatory Position and Rationale states that some uses are classified for restricted use, and some are unclassified, several courses of action are available:

   a. You may label the product for Restricted use. If you do so, you may include on the label uses that are unrestricted, but you may not distinguish them on the label as being unrestricted.

   b. You may delete all restricted uses from your label and submit draft labeling bearing only unrestricted uses.

c. You may "split" your registration, i.e., register two separate products with identical formulations, one bearing only unrestricted uses, and the other bearing restricted uses. To do so, submit two applications for reregistration, each containing all forms and necessary labels. Both applications should be submitted simultaneously. Note that the products will be assigned separate registration numbers.

Item 9B. MISUSE STATEMENT - All products must bear the misuse statement, "It is a violation of Federal law to use this product in a manner inconsistent with its labeling." This statement appears at the beginning of the directions for use, directly beneath the heading of that section.

Item 10A. REENTRY STATEMENT - If a reentry interval has been established by the Agency, it must be included on the label. Additional worker protection statements may be required in accordance with PR Notice 83-2, March 29, 1983.

Item 10B. STORAGE AND DISPOSAL BLOCK - All labels are required to bear storage and disposal statements. These statements are developed for specific containers, sizes, and chemical content. These instructions must be grouped and appear under the heading "Storage and Disposal" in the directions for use. This heading must be set in the same type sizes as required for the child hazard warning. Refer to Appendix II, STOR, PEST/DIS, and CONT/DIS to determine the storage and disposal instructions appropriate for your products.

Item 10C. DIRECTIONS FOR USE - Directions for use must be stated in terms which can be easily read and understood by the average person likely to sue or to supervise the use of the pesticide. When followed, directions must be adequate to protect the public from fraud and from personal injury and to prevent unreasonable adverse effects on the environment. [40 CFR 162.10]

COLLATERAL LABELING

Bulletins, leaflets, circulars, brochures, data sheets, flyers, or other written or graphic printed matter which is referred to on the label or which is to accompany the product are termed collateral labeling. Such labeling may not bear claims or representations that differ in substance from those accepted in connection with registration of the product. It should be made part of the response to this notice and submitted for review.

SUMMARY-6

LABELING REQUIREMENTS OF THE FIFRA, AS AMENDED

ITEM	LABEL ELEMENT	APPLICABILITY OF REQUIREMENT	PLACEMENT ON LABEL		COMMENTS
			REQUIRED	PREFERRED	
1	Product name	All products	Front panel	Center front panel	
2	Company name and address	All products	None	Bottom front panel or end of label text	If registrant is not the producer, must be qualified by "Packed for . . .," "Distributed by . . .," etc.
3	Net contents	All products	None	Bottom front panel or end of label text	May be in metric units in addition to U.S. units.
4	EPA Reg. No.	All products	None	Front panel	Must be in similar type size and run parallel to other type.
5	EPA Est. No.	All products	None	Front panel immediately before or following Reg. No.	May appear on the container instead of the label.
6A	Ingredients statement	All products	Front panel	Immediately following product name	Text must run parallel with other text on the panel.
6B	Pounds/gallon statement	Liquid products where dosage is given as lbs. ai/unit area	Front panel	Directly below the main ingredients statement	
7	Front panel precautionary statements	All products	Front panel		All front panel precautionary statements must be grouped together, preferably blocked.
7A	Keep Out of Reach of Children (Child hazard warning)	All products	Front panel	Above signal word	Note type size requirements.
7B	Signal word	All products	Front panel	Immediately below child hazard warning	Note type size requirements.

SUMMARY-7

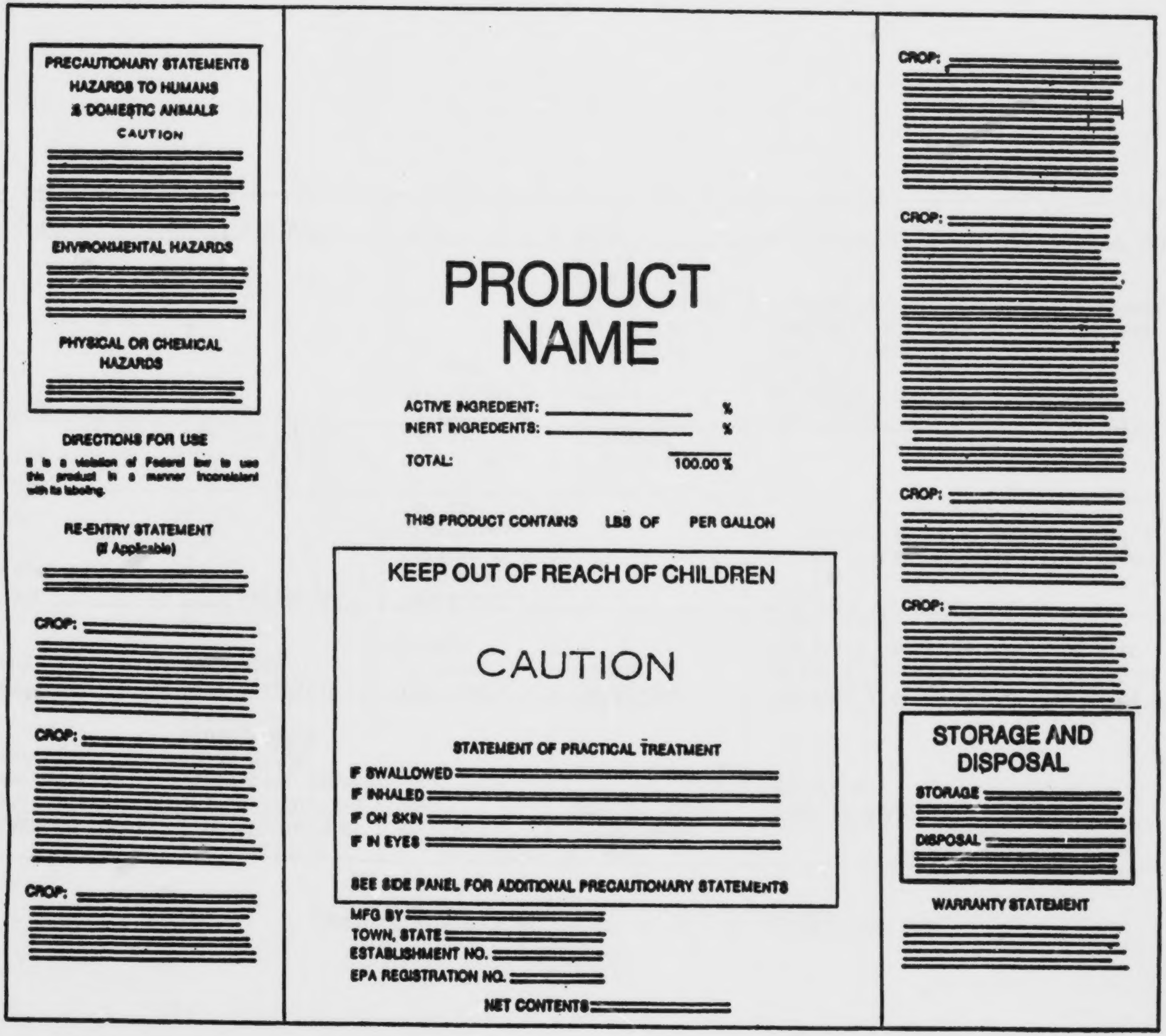
LABELING REQUIREMENTS OF THE FIFRA, AS AMENDED (cont'd)

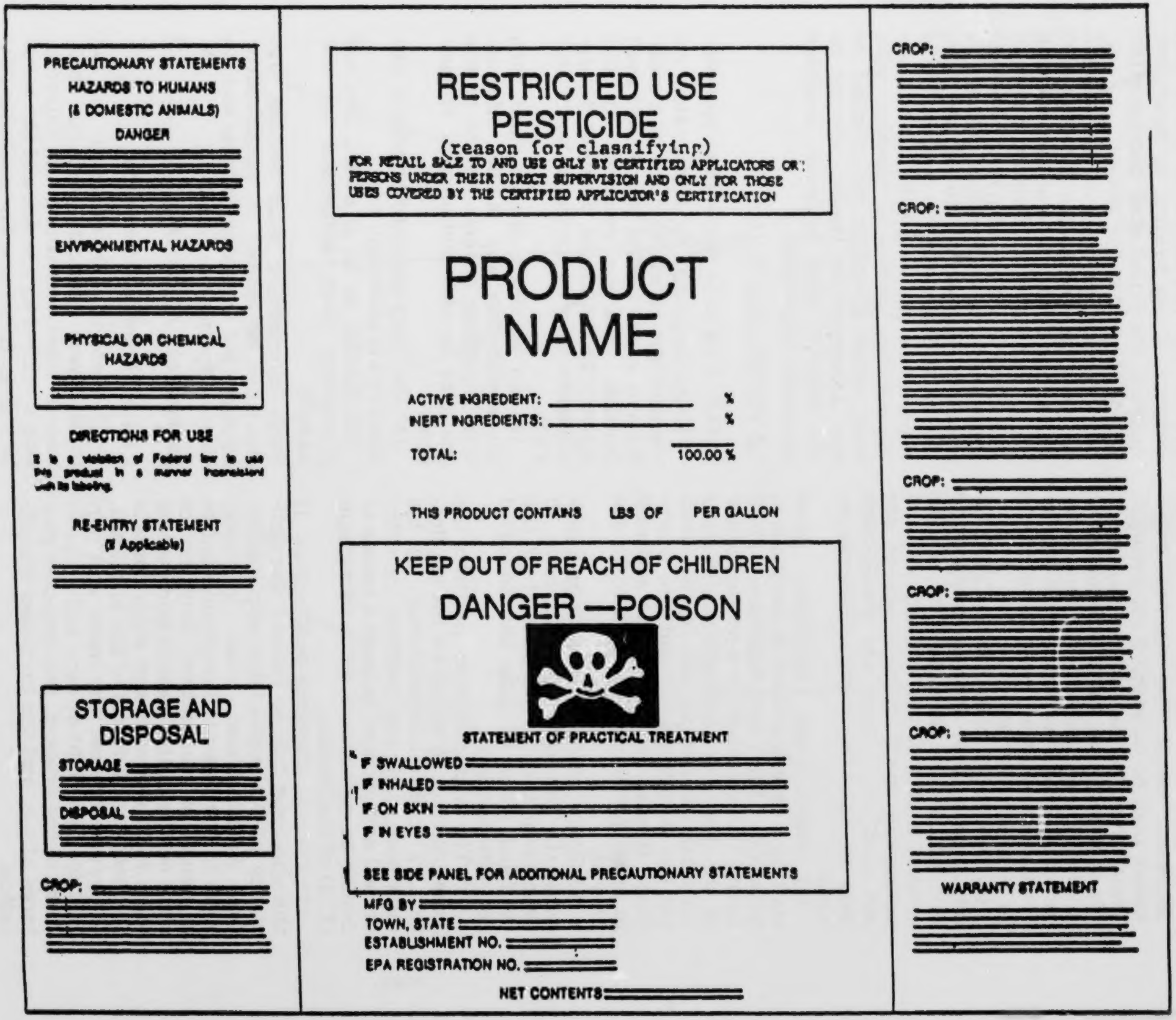
ITEM	LABEL ELEMENT	APPLICABILITY OF REQUIREMENT	PLACEMENT ON LABEL		COMMENTS
			REQUIRED	PREFERRED	
7C	Skull & crossbones and word POISON (in red)	All products which are Category I based on oral, dermal, or inhalation toxicity	Front panel	Both in close proximity to signal word	
7D	Statement of Practical Treatment or First Aid	All products in Categories I, II, and III	Category I: Front panel unless referral statement is used. Others: Grouped with side panel precautionary statements.	Front panel for all	
7E	Referral statement	All products where precautionary labeling appears on other than front panel	Front panel		
8	Side/back panel precautionary statements	All products	None	Top or side of back panel preceding directions for use	Must be grouped under headings in 8A, 8B, and 8C; preferably blocked.
8A	Hazards to humans and domestic animals	All products in Categories I, II, and III	None	Same as above	Must be preceded by appropriate signal word.
8B	Environmental hazards	All products	None	Same as above	Environmental hazards include bee caution where applicable.

SUMMARY-8

LABELING REQUIREMENTS OF THE FIFRA, AS AMENDED (cont'd)

ITEM	LABEL ELEMENT	APPLICABILITY OF REQUIREMENT	PLACEMENT ON LABEL		COMMENTS
			REQUIRED	PREFERRED	
8C	Physical or chemical hazards	All pressurized products, others with flash points under 150°F	None	Same as above	Refer to Appendix II guide PHYS/CHEM
9A	Restricted block	All restricted products	Top center of front panel	Preferably blocked	Includes a statement of the terms of restriction. The words "RESTRICTED USE PESTICIDE" must be same type size as signal word.
9B	Misuse statement	All products	Immediately following heading of directions for use		Required statement is: "It is a violation of Federal law to use this product in a manner inconsistent with its labeling."
10A	Reentry statement	PR Notice 83-2 or as determined by the Agency	In the directions for use	Immediately after misuse statement	
10B	Storage and disposal block	All products	In the directions for use	Immediately before specific directions for use or at the end of directions for use	Must be set apart and clearly distinguishable from other directions for use. Refer to Appendix II guides STOR, CONT/DIS, and PEST/DIS for further information and required statements.
10C	Directions for use	All products	None	None	May be in metric as well as U.S. units


PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS
& DOMESTIC ANIMALS
CAUTION
ENVIRONMENTAL HAZARDS
PHYSICAL OR CHEMICAL HAZARDS
DIRECTIONS FOR USE
It is a violation of Federal law to use this product in a manner inconsistent with its labeling.
RE-ENTRY STATEMENT
(If Applicable)
CROP:
CROP:
CROP:
PRODUCT NAME
ACTIVE INGREDIENT: %
INERT INGREDIENTS: %
TOTAL: 100.00 %
THIS PRODUCT CONTAINS LBS OF PER GALLON
KEEP OUT OF REACH OF CHILDREN
CAUTION
STATEMENT OF PRACTICAL TREATMENT
IF SWALLOWED
IF INHALED
IF ON SKIN
IF IN EYES
SEE SIDE PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS
MFG BY
TOWN, STATE
ESTABLISHMENT NO.
EPA REGISTRATION NO.
NET CONTENTS
CROP:
CROP:
CROP:
CROP:
STORAGE AND DISPOSAL
STORAGE
DISPOSAL
WARRANTY STATEMENT



PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS
(& DOMESTIC ANIMALS)
DANGER

ENVIRONMENTAL HAZARDS

PHYSICAL OR CHEMICAL HAZARDS

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

RE-ENTRY STATEMENT
(If Applicable)

STORAGE AND DISPOSAL

STORAGE:

DISPOSAL:

CROP:

RESTRICTED USE PESTICIDE
(reason for classifying)

FOR RETAIL SALE TO AND USE ONLY BY CERTIFIED APPLICATORS OR PERSONS UNDER THEIR DIRECT SUPERVISION AND ONLY FOR THOSE USES COVERED BY THE CERTIFIED APPLICATOR'S CERTIFICATION

PRODUCT NAME

ACTIVE INGREDIENT:	________	%
INERT INGREDIENTS:	________	%
TOTAL:		100.00 %

THIS PRODUCT CONTAINS LBS OF PER GALLON

KEEP OUT OF REACH OF CHILDREN

DANGER —POISON

STATEMENT OF PRACTICAL TREATMENT

IF SWALLOWED:
IF INHALED:
IF ON SKIN:
IF IN EYES:

SEE SIDE PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS

MFG BY:
TOWN, STATE:
ESTABLISHMENT NO.:
EPA REGISTRATION NO.:

NET CONTENTS:

CROP:

CROP:

CROP:

CROP:

CROP:

WARRANTY STATEMENT

~~(e) *Conditional registration.* Any application for which a review of scientific data is needed, other than an application which the Agency determines may be considered for unconditional registration under paragraph (d) of this section, will be treated as an application for conditional registration under FIFRA sec. 3(c)(7) and will be reviewed and acted upon as set forth in §§ 162.160 through 162.177.~~

~~(f) *Denial of registration.* The Administrator shall deny an application reviewed under paragraph (d) of this section if any of the requirements of paragraph (d)(2) of this section are not met, or if there are insufficient data to make the required determinations.~~

~~(1) *Notification.* Promptly after making a determination to deny a registration, the Administrator shall notify the applicant by certified letter of the denial of registration and shall set forth the reasons and factual basis for the determination and the conditions, if any, which must be satisfied in order for the registration to be approved.~~

~~(2) *Opportunity for remedy by applicant.* (i) The applicant will have 30 days from the date of receipt of the certified letter to take the specified corrective action.~~

~~(ii) The applicant may petition the Administrator to withdraw his application. The Adminstrator may, in his discretion, deny any petition for withdrawal and proceed to issue a notice of denial in accordance with paragraph (f)(3) of this section.~~

~~(3) FEDERAL REGISTER *publication.* If the applicant fails to remedy the deficiency of his registration application, the Administrator shall promptly issue in the FEDERAL REGISTER a notice of denial of registration. Such notice shall set forth the reasons and factual basis for the denial and shall contain the name and address of the applicant, the product name, the name and percentage by weight of each active ingredient in the product, the proposed patterns of use, and the proposed classification.~~

~~(4) *Hearing rights.* Within 30 days following publication of the denial in the FEDERAL REGISTER, the applicant or any interested party with the written authorization of the applicant may request a hearing pursuant to section 6(b) of the Act and Part 164 of this chapter. If no hearing is timely requested, the denial shall become effective at the end of the 30 days.~~

~~(g) *Disposition of material submitted with the application.* The test data and other information submitted with an application shall become a part of the official file of the Agency for that application or registration. Except as provided by section 10 of the Act, within 30 days after the registration of a pesticide, the data called for in the registration statement together with such other scientific information as the Administrator deems relevant to his decision shall be made available for public inspection.~~

~~[48 FR 34004, July 26, 1983]~~

~~§ 162.8 Data to be furnished by applicant.~~

~~(a) An applicant for registration, reregistration, or amendment of a registration under FIFRA sec. 3(c)(5) shall furnish data as required by the Agency to determine whether his application may be approved under this Part.~~

~~(b) An applicant shall submit with his application any factual information regarding adverse effects of the pesticide on the environment or man that:~~

~~(1) Has been obtained by him or has come to his attention; and~~

~~(2) Insofar as he is aware, has not previously been submitted to the Agency.~~

~~Such information shall include, but shall not be limited to, published or unpublished laboratory studies and accident experience.~~

~~[48 FR 34005, July 26, 1983]~~

§ 162.10 Labeling requirements.

(a) *General*—(1) *Contents of the label.* Every pesticide products shall bear a label containing the information specified by the Act and the regulations in this Part. The contents of a label must show clearly and prominently the following:

(i) The name, brand, or trademark under which the product is sold as prescribed in paragraph (b) of this section;

(ii) The name and address of the producer, registrant, or person for whom produced as prescribed in paragraph (c) of this section;

(iii) The net contents as prescribed in paragraph (d) of this section;

(iv) The product registration number as prescribed in paragraph (e) of this section;

(v) The producing establishment number as prescribed in paragraph (f) of this section;

(vi) An ingredient statement as prescribed in paragraph (g) of this section;

(vii) Warning or precautionary statements as prescribed in paragraph (h) of this section;

(viii) The directions for use as prescribed in paragraph (i) of this section; and

(ix) The use classification(s) as prescribed in paragraph (j) of this section.

(2) *Prominence and legibility.* (i) All words, statements, graphic representations, designs or other information required on the labeling by the Act or the regulations in this part must be clearly legible to a person with normal vision, and must be placed with such conspicuousness (as compared with other words, statements, designs, or graphic matter on the labeling) and expressed in such terms as to render it likely to be read and understood by the ordinary individual under customary conditions of purchase and use.

(ii) All required label text must:

(A) Be set in 6-point or larger type;

(B) Appear on a clear contrasting background; and

(C) Not be obscured or crowded.

(3) *Language to be used.* All required label or labeling text shall appear in the English language. However, the Agency may require or the applicant may propose additional text in other languages as is considered necessary to protect the public. When additional text in another language is necessary, all labeling requirements will be applied equally to both the English and other-language versions of the labeling.

(4) *Placement of Label*—(i) *General.* The label shall appear on or be securely attached to the immediate container of the pesticide product. For purposes of this Section, and the misbranding provisions of the Act, "securely attached" shall mean that a label can reasonably be expected to remain affixed during the foreseeable conditions and period of use. If the immediate container is enclosed within a wrapper or outside container through which the label cannot be clearly read, the label must also be securely attached to such outside wrapper or container, if it is a part of the package as customarily distributed or sold.

(ii) *Tank cars and other bulk containers*—(A) *Transportation.* While a pesticide product is in transit, the appropriate provisions of 49 CFR Parts 170-189, concerning the transportation of hazardous materials, and specifically those provisions concerning the labeling, marking and placarding of hazardous materials and the vehicles carrying them, define the basic Federal requirements. In addition, when any registered pesticide product is transported in a tank car, tank truck or other mobile or portable bulk container, a copy of the accepted label must be attached to the shipping papers, and left with the consignee at the time of delivery.

(B) *Storage.* When pesticide products are stored in bulk containers, whether mobile or stationary, which remain in the custody of the user, a copy of the label of labeling, including all appropriate directions for use, shall be securely attached to the container in the immediate vicinity of the discharge control valve.

(5) *False or misleading statements.* Pursuant to section 2(q)(1)(A) of the Act, a pesticide or a device declared subject to the Act pursuant to § 162.15, is misbranded if its labeling is false or misleading in any particular including both pesticidal and non-pesticidal claims. Examples of statements or representations in the labeling which constitute misbranding include:

(i) A false or misleading statement concerning the composition of the product;

(ii) A false or misleading statement concerning the effectiveness of the product as a pesticide or device;

(iii) A false or misleading statement about the value of the product for purposes other than as a pesticide or device;

(iv) A false or misleading comparison with other pesticides or devices;

(v) Any statement directly or indirectly implying that the pesticide or device is recommended or endorsed by any agency of the Federal Government;

(vi) The name of a pesticide which contains two or more principal active ingredients if the name suggests one or more but not all such principal active ingredients even though the names of the other ingredients are stated elsewhere in the labeling;

(vii) A true statement used in such a way as to give a false or misleading impression to the purchaser;

(viii) Label disclaimers which negate or detract from labeling statements required under the Act and these regulations;

(ix) Claims as to the safety of the pesticide or its ingredients, including statements such as "safe," "nonpoisonous," "noninjurious," "harmless" or "nontoxic to humans and pets" with or without such a qualifying phrase as "when used as directed"; and

(x) Non-numerical and/or comparative statements on the safety of the product, including but not limited to:

(A) "Contains all natural ingredients";

(B) "Among the least toxic chemicals known"

(C) "Pollution approved"

(6) *Final printed labeling.* (i) Except as provided in paragraph (a)(6)(ii) of this section, final printed labeling must be submitted and accepted prior to registration. However, final printed labeling need not be submitted until draft label texts have been provisionally accepted by the Agency.

(ii) Clearly legible reproductions or photo reductions will be accepted for unusual labels such as those silk-screened directly onto glass or metal containers or large bag or drum labels. Such reproductions must be of microfilm reproduction quality.

(b) *Name, brand, or trademark.* (1) The name, brand, or trademark under which the pesticide product is sold shall appear on the front panel of the label.

(2) No name, brand, or trademark may appear on the label which:

(i) Is false or misleading, or

(ii) Has not been approved by the Administrator through registration or supplemental registration as an additional name pursuant to § 162.6(b)(4).

(c) Name and address of producer, registrant, or person for whom produced. An unqualified name and address given on the label shall be considered as the name and address of the producer. If the registrant's name appears on the label and the registrant is not the producer, or if the name of the person for whom the pesticide was produced appears on the label, it must be qualified by appropriate wording such as "Packed for * * *," "Distributed by * * *," or "Sold by * * *" to show that the name is not that of the producer.

(d) *Net weight or measure of contents.* (1) The net weight or measure of content shall be exclusive of wrappers or other materials and shall be the average content unless explicitly stated as a minimum quantity.

(2) If the pesticide is a liquid, the net content statement shall be in terms of liquid measure at 68° F (20°C) and shall be expressed in conventional American units of fluid ounces, pints, quarts, and gallons.

(3) If the pesticide is solid or semisolid, viscous or pressurized, or is a mixture of liquid and solid, the net content statement shall be in terms of weight expressed as avoirdupois pounds and ounces.

(4) In all cases, net content shall be stated in terms of the largest suitable units, i.e., "1 pound 10 ounces" rather than "26 ounces."

(5) In addition to the required units specified, net content may be expressed in metric units.

(6) Variation above minimum content or around an average is permissible only to the extent that it represents deviation unavoidable in good manufacturing practice. Variation below a stated minimum is not permitted. In no case shall the average content of the packages in a shipment fall below the stated average content.

(e) *Product registration number.* The registration number assigned to the pesticide product at the time of registration shall appear on the label, preceded by the phrase "EPA Registration No.," or the phrase "EPA Reg. No." The registration number shall be set in type of a size and style similar to other print on that part of the label on which it appears and shall run parallel to it. The registration number and the required identifying phrase shall not appear in such a manner as to suggest or imply recommendation or endorsement of the product by the Agency.

(f) *Producing establishments registration number.* The producing establishment registration number preceded by the phrase "EPA Est.", of the final establishment at which the product was produced may appear in any suitable location on the label or immediate container. It must appear on the wrapper or outside container of the package if the EPA establishment registration number on the immediate container cannot be clearly read through such wrapper or container.

(g) *Ingredient statement*—(1) *General.* The label of each pesticide product must bear a statement which contains the name and percentage by weight of each active ingredient, the total percentage by weight of all inert ingredients; and if the pesticide contains arsenic in any form, a statement of the percentages of total and water-soluble arsenic calculated as elemental arsenic. The active ingredients must be designated by the term "active ingredients" and the inert ingredients by the term "inert ingredients," or the singular forms of these terms when appropriate. Both terms shall be in the same type size, be aligned to the same margin and be equally prominent. The statement "Inert Ingredients, none" is not required for pesticides which contain 100 percent active ingredients. Unless the ingredient statement is a complete analysis of the pesticide, the term "analysis" shall not be used as a heading for the ingredient statement.

(2) *Position of ingredient statement.* (i) The ingredient statement is normally required on the front panel of the label. If there is an outside container or wrapper through which the ingredient statement cannot be clearly read, the ingredient statement must also appear on such outside container or wrapper. If the size or form of the package makes it impracticable to place the ingredient statement on the front panel of the label, permission may be granted for the ingredient statement to appear elsewhere.

(ii) The text of the ingredient statement must run parallel with other text on the panel on which it appears, and must be clearly distinguishable from and must not be placed in the body of other text.

(3) *Names to be used in ingredient statement.* The name used for each ingredient shall be the accepted common name, if there is one, followed by the chemical name. The common name may be used alone only if it is well known. If no common name has been established, the chemical name alone shall be used. In no case will the use of a trademark or proprietary name be permitted unless such name has been accepted as a common name by the Administrator under the authority of section 25(c)(6).

(4) *Statements of percentages.* The percentages of ingredients shall be stated in terms of weight-to-weight. The sum of percentages of the active and the inert ingredients shall be 100. Percentages shall not be expressed by a range of values such as "22-25%." If the uses of the pesticide product are expressed as weight of active ingredient per unit area, a statement of the weight of active ingredient per unit volume of the pesticide formulation shall also appear in the ingredient statement.

(5) *Accuracy of stated percentages.* The percentages given shall be as precise as possible reflecting good manufacturing practice. If there may be unavoidable variation between manufacturing batches, the value stated for each active ingredient shall be the lowest percentage which may be present.

(6) *Deterioration.* Pesticides which change in chemical composition significantly must meet the following labeling requirements:

(i) In cases where it is determined that a pesticide formulation changes chemical composition significantly, the product must bear the following statement in a prominent position on the label: "Not for sale or use after [date]."

(ii) The product must meet all label claims up to the expiration time indicated on the label.

(7) *Inert ingredients.* The Administrator may require the name of any inert ingredient(s) to be listed in the ingredient statement if he determines that such ingredient(s) may pose a hazard to man or the environment.

(h) *Warnings and precautionary statements.* Required warnings and precautionary statements concerning the general areas of toxicological hazard including hazard to children, environmental hazard, and physical or chemical hazard fall into two groups; those required on the front panel of the labeling and those which may appear elsewhere. Specific requirements concerning content, placement, type size, and prominence are given below.

(1) *Required front panel statements.* With the exception of the child hazard warning statement, the text required on the front panel of the label is determined by the Toxicity Category of the pesticide. The category is assigned on the basis of the highest hazard shown by any of the indicators in the table below:

Hazard indicators	Toxicity categories			
	I	II	III	IV
Oral LD_{50}	Up to and including 50 mg/kg.	From 50 thru 500 mg/kg.	From 500 thru 5000 mg/kg.	Greater than 5000 mg/kg.
Inhalation LC_{50}	Up to and including .2 mg/liter.	From .2 thru 2 mg/liter	From 2. thru 20 mg/liter	Greater than 20 mg/liter.
Dermal LD_{50}	Up to and including 200 mg/kg.	From 200 thru 2000	From 2,000 thru 20,000	Greater than 20,000.
Eye effects	Corrosive; corneal opacity not reversible within 7 days.	Corneal opacity reversible within 7 days; irritation persisting for 7 days.	No corneal opacity; irritation reversible within 7 days.	No irritation.
Skin effects	Corrosive	Severe irritation at 72 hours.	Moderate irritation at 72 hours.	Mild or slight irritation at 72 hours.

(i) *Human hazard signal word*—(A) *Toxicity Category I.* All pesticide products meeting the criteria of Toxicity Category I shall bear on the front panel the signal word "Danger." In addition if the product was assigned to Toxicity Category I on the basis of its oral, inhalation or dermal toxicity (as distinct from skin and eye local effects) the word "Poison" shall appear in red on a background of distinctly contrasting color and the skull and crossbones shall appear in immediate proximity to the word "poison."

(B) *Toxicity Category II.* All pesticide products meeting the criteria of Toxicity Category II shall bear on the front panel the signal word "Warning."

(C) *Toxicity Category III.* All pesticide products meeting the criteria of Toxicity Category III shall bear on the front panel the signal word "Caution."

(D) *Toxicity Category IV.* All pesticide products meeting the criteria of Toxicity Category IV shall bear on the front panel the signal word "Caution."

(E) *Use of signal words.* Use of any signal word(s) associated with a higher Toxicity Category is not permitted except when the Agency determines that such labeling is necessary to prevent unreasonable adverse effects on man or the environment. In no case shall more than one human hazard signal word appear on the front panel of a label.

(ii) *Child hazard warning.* Every pesticide product label shall bear on the front panel the statement "keep out of reach of children." Only in cases where the likelihood of contact with children during distribution, marketing, storage or use is demonstrated by the applicant to be extremely remote, or if the nature of the pesticide is such that it is approved for use on infants or small children, may the Administrator waive this requirement.

(iii) *Statement of practical treatment*—(A) *Toxicity Category I.* A statement of practical treatment (first aid or other) shall appear on the front panel of the label of all pesticides falling into Toxicity Category I on the basis of oral, inhalation or dermal toxicity. The Agency may, however, permit reasonable variations in the placement of the statement of practical treatment is some reference such as "See statement of practical treatment on back panel" appears on the front panel near the word "Poison" and the skull and crossbones.

(B) *Other toxicity categories.* The statement of practical treatment is not required on the front panel except as described in paragraph (h)(1)(iii)(A) of this section. The applicant may, however, include such a front panel statement at his option. Statements of practical treatment are, however, required elsewhere on the label in accord with paragraph (h)(2) of this section if they do not appear on the front panel.

(iv) *Placement and prominence.* All the require front panel warning statements shall be grouped together on the label, and shall appear with sufficient prominence relative to other front panel text and graphic material to make them unlikely to be overlooked under customary conditions of purchase and use. The following table shows the minimum type size requirements for the front panel warning statements on various sizes of labels:

Size of label front panel in square inches	Points	
	Required signal word, all capitals	"Keep out of reach of children"
5 and under	6	6
Above 5 to 10	10	6
Above 10 to 15	12	8
Above 15 to 30	14	10
Over 30	18	12

(2) *Other required warnings and precautionary statements.* The warnings and precautionary statements as required below shall appear together on the label under the general heading "Precautionary Statements" and under appropriate subheadings of "Hazard to Humans and Domestic Animals," "Environmental Hazard" and "Physical or Chemical Hazard."

(i) *Hazard to humans and domestic animals.* (A) Where a hazard exists to humans or domestic animals, precautionary statements are required indicating the particular hazard, the route(s) of exposure and the precautions to be taken to avoid accident, injury or damage. The precautionary paragraph shall be immediately preceded by the appropriate hazard signal word.

(B) The following table depicts typical precautionary statements. These statements must be modified or expanded to reflect specific hazards.

Toxicity category	Precautionary statements by toxicity category	
	Oral, inhalation, or dermal toxicity	Skin and eye local effects
I	Fatal (poisonous) if swallowed [inhaled or absorbed through skin]. Do not breathe vapor [dust or spray mist]. Do not get in eyes, on skin, or on clothing [Front panel statement of practical treatment required.].	Corrosive, causes eye and skin damage [or skin irritation]. Do not get in eyes, on skin, or on clothing. Wear goggles or face shield and rubber gloves when handling. Harmful or fatal if swallowed. [Appropriate first aid statement required.]
II	May be fatal if swallowed [inhaled or absorbed through the skin]. Do not breathe vapors [dust or spray mist]. Do not get in eyes, on skin, or on clothing. [Appropriate first aid statements required.].	Causes eye [and skin] irritation. Do not get in eyes, on skin, or on clothing. Harmful if swallowed. [Appropriate first aid statement required.]
III	Harmful if swallowed [inhaled or absorbed through the skin]. Avoid breathing vapors [dust or spray mist]. Avoid contact with skin [eyes or clothing]. [Appropriate first aid statement required.].	Avoid contact with skin, eyes or clothing. In case of contact immediately flush eyes or skin with plenty of water. Get medical attention if irritation persists.
IV	[No precautionary statements required.]	[No precautionary statements required.]

(ii) *Environmental hazards.* Where a hazard exists to non target organisms excluding humans and domestic animals, precautionary statements are required stating the nature of the hazard and the appropriate precautions to avoid potential accident, injury or damage. Examples of the hazard statements and the circumstances under which they are required follow:

(A) If a pesticide intended for outdoor use contains an active ingredient with a mammalian acute oral LD_{50} of 100 or less, the statement "This Pesticide is Toxic to Wildlife" is required.

(B) If a pesticide intended for outdoor use contains an active ingredient with a fish acute LC_{50} of 1 ppm or less, the statement "This Pesticide is Toxic to Fish" is required.

(C) If a pesticide intended for outdoor use contains an active ingredient with an avian acute oral LD_{50} of 100 mg/kg or less, or a subacute dietary LC_{50} of 500 ppm or less, the statement "This Pesticide is Toxic to Wildlife" is required.

(D) If either accident history or field studies demonstrate that use of the pesticide may result in fatality to birds, fish or mammals, the statement "This pesticide is extremely toxic to wildlife (fish)" is required.

(E) For uses involving foliar application to agricultural crops, forests, or shade trees, or for mosquito abatement treatments, pesticides toxic to pollinating insects must bear appropriate label cautions.

(F) For all outdoor uses other than aquatic applications the label must bear the caution "Keep out of lakes, ponds or streams. Do not contaminate water by cleaning of equipment or disposal of wastes."

(iii) *Physical or chemical hazards.* Warning statements on the flammability or explosive characteristics of the pesticide are required as follows:

Flash point	Required text
(A) PRESSURIZED CONTAINERS	
Flash point at or below 20° F; if there is a flashback at any valve opening.	Extremely flammable. Contents under pressure. Keep away from fire, sparks, and heated surfaces. Do not puncture or incinerate container. Exposure to temperatures above 130° F may cause bursting.
Flash point above 20° F and not over 80° F or if the flame extension is more than 18 in long at a distance of 6 in from the flame.	Flammable. Contents under pressure. Keep away from heat, sparks, and open flame. Do not puncture or incinerate container. Exposure to temperatures above 130° F may cause bursting.
All other pressurized containers	Contents under pressure. Do not use or store near heat or open flame. Do not puncture or incinerate container. Exposure to temperatures above 130° F may cause bursting.
(B) NONPRESSURIZED CONTAINERS	
At or below 20° F	Extremely flammable. Keep away from fire, sparks, and heated surfaces.
Above 20° F and not over 80° F	Flammable. Keep away from heat and open flame.
Above 80° F and not over 150° F	Do not use or store near heat or open flame.

(i) *Directions for Use*—(1) *General requirements*—(i) *Adequacy and clarity of directions.* Directions for use must be stated in terms which can be easily read and understood by the average person likely to use or to supervise the use of the pesticide. When followed, directions must be adequate to protect the public from fraud and from personal injury and to prevent unreasonable adverse effects on the environment.

(ii) *Placement of directions for use.* Directions may appear on any portion of the label provided that they are conspicuous enough to be easily read by the user of the pesticide product. Directions for use may appear on printed or graphic matter which accompanies the pesticide provided that:

(A) If required by the Agency, such printed or graphic matter is securely attached to each package of the pesticide, or placed within the outside wrapper or bag;

(B) The label bears a reference to the directions for use in accompanying leaflets or circulars, such as "See directions in the enclosed circular:" and

(C) The Administrator determines that it is not necessary for such directions to appear on the label.

(iii) *Exceptions to requirement for direction for use*—(A) Detailed directions for use may be omitted from labeling of pesticides which are intended for use only by manufacturers of products other than pesticide products in their regular manufacturing processes, provided that:

(1) The label clearly shows that the product is intended for use only in manufacturing processes and specifies the type(s) of products involved.

(2) Adequate information such as technical data sheets or bulletins, is available to the trade specifying the type of product involved and its proper use in manufacturing processes;

(3) The product will not come into the hands of the general public except after incorporation into finished products; and

(4) The Administrator determines that such directions are not necessary to prevent unreasonable adverse effects on man or the environment.

(B) Detailed directions for use may be omitted from the labeling of pesticide products for which sale is limited to physicians, veterinarians, or druggists, provided that:

(1) The label clearly states that the product is for use only by physicians or veterinarians;

(2) The Administrator determines that such directions are not necessary to prevent unreasonable adverse effects on man or the environment; and

(3) The product is also a drug and regulated under the provisions of the Federal Food, Drug and Cosmetic Act.

(C) Detailed directions for use may be omitted from the labeling of pesticide products which are intended for use only by formulators in preparing pesticides for sale to the public, provided that:

(1) There is information readily available to the formulators on the composition, toxicity, methods of use, applicable restrictions or limitations, and effectiveness of the product for pesticide purposes;

(2) The label clearly states that the product is intended for use only in manufacturing, formulating, mixing, or repacking for use as a pesticide and specifies the type(s) of pesticide products involved;

(3) The product as finally manufactured, formulated, mixed, or repackaged is registered; and

(4) The Administrator determines that such directions are not necessary to prevent unreasonable adverse effects on man or the environment.

(2) *Contents of Directions for Use.* The directions for use shall include the following, under the headings "Directions for Use":

(i) The statement of use classification as prescribed in 162.10(j) immediately under the heading "Directions for Use."

(ii) Immediately below the statement of use classification, the statement "It is a violation of Federal law to use this product in a manner inconsistent with its labeling."

(iii) The site(s) of application, as for example the crops, animals, areas, or objects to be treated.

(iv) The target pest(s) associated with each site.

(v) The dosage rate associated with each site and pest.

(vi) The method of application, including instructions for dilution, if required, and type(s) of application apparatus or equipment required.

(vii) The frequency and timing of applications necessary to obtain effective results without causing unreasonable adverse effects on the environment.

(viii) Specific limitations on reentry to areas where the pesticide has been applied, meeting the requirements concerning reentry provided by 40 CFR Part 170.

(ix) Specific directions concerning the storage and disposal of the pesticide and its container, meeting the requirements of 40 CFR Part 165. These instructions shall be grouped and appear under the heading "Storage and Disposal." This heading must be set in type of the same minimum sizes as required for the child hazard warning. (See Table in § 162.10(h)(1)(iv))

(x) Any limitations or restrictions on use required to prevent unreasonable adverse effects, such as:

(A) Required intervals between application and harvest of food or feed crops.

(B) Rotational crop restrictions.

(C) Warnings as required against use on certain crops, animals, objects, or in or adjacent to certain areas.

(D) [Reserved]

(E) For restricted use pesticides, a statement that the pesticide may be applied under the direct supervision of a certified applicator who is not physically present at the site of application but nonetheless available to the person applying the pesticide, unless the Agency has determined that the pesticide may only be applied under the direct supervision of a certified applicator who is physically present.

(F) Other pertinent information which the Administrator determines to be necessary for the protection of man and the environment.

(j) *Statement of Use Classification.* By October 22, 1976, all pesticide products must bear on their labels a statement of use classification as described in paragraphs (j) (1) and (2) of this section. Any pesticide product for which some uses are classified for general use and others for restricted use shall be separately labeled according to the labeling standards set forth in this subsection, and shall be marketed as separate products with different registration numbers, one bearing directions only for general use(s) and the other bearing directions for restricted use(s) except that, if a product has both restricted use(s) and general use(s), both of these uses may appear on a product labeled for restricted use. Such products shall be subject to the provisions of § 162.10(j)(2).

(1) *General Use Classification.* Pesticide products bearing directions for use(s) classified general shall be labeled with the exact words "General Classification" immediately below the heading "Directions for Use." And reference to the general classification that suggests or implies that the general utility of the pesticide extends beyond those purposes and uses contained in the Directions for Use will be considered a false or misleading statement under the statutory definitions of misbranding.

(2) *Restricted Use Classification.* Pesticide products bearing direction for use(s) classified restricted shall bear statements of restricted use classification on the front panel as described below:

(i) *Front panel statement of restricted use classification.* (A) At the top of the front panel of the label, set in type of the same minimum sizes as required for human hazard signal words (see table in § 162.10(h)(1)(iv)), and appearing with sufficient prominence relative to other text and graphic material on the front panel to make it unlikely to be overlooked under customary conditions of purchase and use, the statement "Restricted Use Pesticide" shall appear.

(B) Directly below this statement on the front panel, a summary statement of the terms of restriction imposed as a precondition to registration shall appear. If use is restricted to certified applicators, the following statement is required: "For retail sale to and use only by Certified Applicators or persons under their direct supervision and only for those uses covered by the Certified Applicator's certification." If, however, other regulatory restrictions are imposed, the Administrator will define the appropriate wording for the terms of restriction by regulation.

(k) Advertising. [Reserved]

[40 FR 28268, July 3, 1975; 40 FR 32329, Aug. 1, 1975; 40 FR 36571, Aug. 21, 1975, as amended at 43 FR 5786, Feb. 9, 1978]

~~§ 162.11 Criteria for determinations of unreasonable adverse effects.~~

~~(a)–(b) [Reserved]~~

~~(c) *Use classification*—(1) *Classification criteria for new registrations.* Except as provided in paragraph (c)(4) of this section, a specific use(s) of a pesticide product not previously registered shall be classified for general use if each of the applicable criteria set forth in paragraph (c)(1)(i) through (iii) of this section is met. Otherwise, the product use(s) shall be classified for restricted use unless a review of the labeling pursuant to paragraph (c)(3) of this section indicates that the product use may be classified for general use or the benefits from unrestricted use of the pesticide outweigh the risks of unrestricted use of the pesticide. Each of the separate criteria as set forth below must be applied for the product use(s) to be classified~~

PHYSICAL-CHEMICAL HAZARDS

Criteria	Required Label Statement
I. Pressurized Containers	
A. Flashpoint at or below 20°F; or if there is a flashback at any valve opening.	Extremely flammable. Contents under pressure. Keep away from fire, sparks, and heated surfaces. Do not puncture or incinerate container. Exposure to temperatures above 130°F may cause bursting.
B. Flashpoint above 20°F and not over 80°F; or if the flame extension is more than 18 inches long at a distance of 6 inches from the valve opening.	Flammable. Contents under pressure. Keep away from heat, sparks, and flame. Do not puncture or incinerate container. Exposure to temperatures above 130°F may cause bursting.
C. ALL OTHER PRESSURIZED CONTAINERS	Contents under pressure. Do not use or store near heat or open flame. Do not puncture or incinerate container. Exposure to temperatures above 130°F may cause bursting.
II. Non-Pressurized Containers	
A. Flashpoint at or below 20°F.	Extremely flammable. Keep away from fire, sparks, and heated surfaces.
B. Flashpoint above 20°F and not over 80°F.	Flammable. keep away from heat and open flame.
C. Flashpoint over 80°F and not over 150°F.	Do not use or store near heat and open flame.
D. Flashpoint above 150°F.	None required.

STOR-1

STORAGE INSTRUCTIONS FOR PESTICIDES

Heading:

All products are required to bear specific label instructions about storage and disposal. Storage and disposal instructions must be grouped together in the directions for use portion of the label under the heading STORAGE AND DISPOSAL. Products intended solely for domestic use need not include the heading "STORAGE AND DISPOSAL."

Storage Instructions:

All product labels are required to have appropriate storage instructions. Specific storage instructions are not prescribed. Each registrant must develop his own storage instructions, considering, when applicable, the following factors:

1. Conditions of storage that might alter the composition or usefulness of the pesticide. Examples could be temperature extremes, excessive moisture or humidity, heat, sunlight, friction, or contaminating substances or media.

2. Physical requirements of storage which might adversely affect the container of the product and its ability to continue to function properly. Requirements might include positioning of the container in storage, storage or damage due to stacking, penetration of moisture, and ability to withstand shock or friction.

3. Specifications for handling the pesticide container, including movement of container within the storage area, proper opening and closing procedures (particularly for opened containers), and measures to minimize exposure while opening or closing container.

4. Instructions on what to do if the container is damaged in any way, or if the pesticide is leaking or has been spilled, and precautions to minimize exposure if damage occurs.

5. General precautions concerning locked storage, storage in original container only, and separation of pesticides during storage to prevent cross-contamination of other pesticides, fertilizer, food, and feed.

6. General storage instructions for household products should emphasize storage in original container and placement in locked storage areas.

PEST/DIS-1

PESTICIDE DISPOSAL INSTRUCTIONS

The label of all products, except those intended solely for domestic use, must bear explicit instructions about pesticide disposal. The statements listed below contain the exact wording that must appear on the label of these products:

1. The labels of all products, except domestic use, must contain the statement, "Do not contaminate water, food, or feed by storage or disposal."

2. Except those products intended solely for domestic use, the labels of all products that contain active ingredients that are Acute Hazardous Wastes or are assigned to Toxicity Category I on the basis of oral or dermal toxicity, or Toxicity Category I or II on the basis of acute inhalation toxicity must bear the following pesticide disposal statement:

> "Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency or the Hazardous Waste representative at the nearest EPA Regional Office for guidance."

3. The labels of all products, except those intended for domestic use, containing active or inert ingredients that are Toxic Hazardous Wastes or meet any of the criteria in 40 CFR 261, Subpart C for a hazardous waste must bear the following pesticide disposal statement:

> "Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance."

4. Labels for all other products, except those intended for domestic use, must bear the following pesticide disposal statement:

> "Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility."

5. Products intended for domestic use only must bear the following disposal statement: "Securely wrap original container in several layers of newspaper and discard in trash."

CONT/DIS-1

CONTAINER DISPOSAL INSTRUCTIONS

The label of each product must bear container disposal instructions appropriate to the type of container.

1. Domestic use products must bear one of the following container disposal statements:

Container Type	Statement
Non-aerosol products (bottles, cans, jars)	Do not reuse container (bottle, can, jar). Rinse thoroughly before discarding in trash.
Non-aerosol products (bags)	Do not reuse bag. Discard bag in trash.
Aerosol products	Replace cap and discard containers in trash. Do not incinerate or puncture.

2. All other products must bear container disposal instructions, based on container type, listed below:

Container Type	Statement
Metal containers (non-aerosol)	Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.
Plastic containers	Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.
Glass containers	Triple rinse (or equivalent). Then dispose of in a sanitary landfill or by other approved state and local procedures.
Fiber drums with liners	Completely empty liner by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into application equipment. Then dispose of liner in a sanitary landfill or by incineration if allowed by state and local authorities. If drum is contaminated and cannot be reused[1], dispose of in the same manner.
Paper and plastic bags	Completely empty bag into application equipment. Then dispose of empty bag in a sanitary landfill or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.
Compressed gas cylinders	Return empty cylinder for reuse (or similar wording).

[1] Manufacturer may replace this phrase with one indicating whether and how fiber drum may be reused.

III. USE INDEX APPENDIX

c015801

2-CARBOMETHOXY-1-METHYLVINYL DIMETHYL PHOSPHATE, ALPHA ISOMER AND RELATED COMPOUNDS*

TYPE PESTICIDE: Insecticide, Acaricide

FORMULATIONS:
Tech (100%)
D (2%)
EC (1 lb/gal, 2 lb/gal, 4 lb/gal, 25.4%)
SC/L (2 lb/gal, 4 lb/gal, 10.3 lb/gal)
RTU (3.64%, 5%)

GENERAL WARNINGS AND LIMITATIONS: RESTRICTED USE PESTICIDE. For retail sale to and use only by certified applicators or persons under their direct supervision and only for those uses covered by the certified applicator's certification. Direct supervision for this product is defined as the certified applicator being physically present during application, mixing, loading, repair and cleaning of application equipment. Commercial certified applicators must also ensure that all persons involved in these activities are informed of the precautionary statements.
Protective Clothing, Equipment and Work Safety Statements:
The following protective equipment must be worn during mixing/loading, application, repair and cleaning of mixing, loading, and application equipment and, disposal of mevinphos: Protective suit of 1 or 2 pieces that covers all parts of the body except head, hands, and feet; chemical-resistant gloves; chemical-resistant shoes (or chemical-resistant shoe coverings or chemical-resistant boots); goggles or face shield; hood or wide brimmed hat; NIOSH or MSHA approved respiratory protection device.
If mixing/loading is performed using a closed system, the following protective clothing and equipment may be worn as an alternative: Long-sleeve shirt; long-legged pants; chemical-resistant gloves; chemical-resistant apron; shoes and socks. Goggles or face shield must be worn when the system is under pressure. All other protective clothing and equipment required for use with open systems must be available nearby.
Pilots should not assist in mixing and loading operation.
If application is performed using an enclosed cab or cockpit, the following protective clothing and equipment may be worn as an alternative: Long-sleeve shirt and long-legged pants; shoes and socks. Chemical-resistant gloves must be available in the cab or cockpit and must be worn during entry to and exit from the application vehicle. All other protective clothing and equipment required for use during application must be available in the cab and must be worn when exiting the cab into treated area. When used for this purpose, contaminated clothing may be not be brought back into the cab unless in an enclosure such as a plastic bag. This clothing is inadequate for protection during repair and cleaning of application equipment and early reentry to treated areas.
The use of human flaggers during aerial application of mevinphos is prohibited unless the flaggers are in enclosed cabs.
Before removing gloves, wash them with soap and water. Take off all work clothes and shoes. Shower using soap and water. Wear only clean clothes when leaving job--do not wear contaminated clothing. Personal and protective clothing worn during work must be stored and laundered separately from household articles. Clean or launder protective clothing after each use.

*mevinphos
phosdrin

2-CARBOMETHOXY-1-METHYLVINYL DIMETHYL PHOSPHATE, ALPHA ISOMER AND RELATED COMPOUNDS

GENERAL WARNINGS AND LIMITATIONS (continued)

Respirators must be cleaned and filters replaced according to instructions included with the respirators. Protective clothing and protective equipment that becomes heavily contaminated or drenched with mevinphos must be destroyed according to State and local regulations. Heavily contaminated or drenched clothing cannot be adequately decontaminated.

If pesticide comes in contact with skin, wash off with soap and water and contact a physician immediately. Always wash hands, face, and arms with soap and water before smoking, eating, drinking, or toileting.

If handled indoors provide mechanical exhaust ventilation. Keep all unprotected persons, children, livestock, and pets away from treated area or where there is danger of drift. Do not rub eyes or mouth with hands.

Reentry Interval:

Reentry into treated citrus groves, grape vineyards, and nectarine and peach orchards is prohibited for 96 hours (4 days) after the end of application, unless the protective clothing specified for early reentry is worn. Reentry into all other treated areas is prohibited for 48 hours (2 days) after the end of application, unless the specified protective clothing for early reentry is worn.

For early reentry into treated areas after sprays have dried, wear protective suit of 1 or 2 pieces covering all parts of the body except head, hands, and feet; chemical-resistant gloves; chemical-resistant shoes (or chemical-resistant shoe coverings or chemical-resistant boots).

For early reentry into treated areas before sprays have dried, wear all specified protective clothing for an applicator.

For dust formulations and in states that may require more restrictive reentry intervals, consult State Departments of Agriculture.

Bee Caution:

Mevinphos is highly toxic to bees exposed to direct treatment on blooming crops or weeds. Do not apply mevinphos or allow it to drift to blooming crops or weeds while bees are actively visiting the area.

Commodity Tolerances (other than those listed in the text):

Parsley, dehydrated	4 ppm

Definition of Terms:

** - Exact computation of actual dosage is not possible because of the lack of weight/volume information on the label. Extrapolation from other formulations reveals that the dosage from this label appears to fall within the range shown by formulations with known weight/volume ratios.

2-CARBOMETHOXY-1-METHYLVINYL DIMETHYL PHOSPHATE, ALPHA ISOMER AND RELATED COMPOUNDS

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations

TERRESTRIAL FOOD CROP

(Agricultural Crops)

General Warnings and Limitations: Mevinphos is toxic to fish and wildlife. Drift and runoff may be hazardous to aquatic organisms in neighboring areas. Do not apply directly to water or wetlands (swamps, bogs, marshes, and potholes). Do not contaminate water by cleaning of equipment or disposal of wastes. Apply when pests first appear and repeat as needed to maintain control. Apply by aircraft in 3 to 10 gallons of water per acre. For application to fruit and nut crops, apply sufficient finished spray for thorough coverage not exceeding maximum gallonage indicated for that crop. Apply in a minimum of 10 gallons of water per acre by concentrate ground equipment. For field crops and vegetable crops, apply in 10 to 125 gallons of water per acre when using ground equipment.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
/23001AA	Alfalfa		1 ppm 1 day preharvest interval through 0.5 pound per acre for foliar application.
/23003AA	Clover		
ITBJADA	Alfalfa caterpillar	0.25 lb/A (2% D) or 0.125-0.5 lb/A (2, 4 lb/gal EC) (4, 10.3 lb/gal SC/L)	Foliar application.
IRACAAA	Aphids		
INASBWC	Alfalfa weevil (larvae)	0.25-0.5 lb/A (2% D) (2, 4 lb/gal EC) (4, 10.3 lb/gal SC/L)	
ITBCCZA	Climbing cutworms		
IVABAAA	Grasshoppers		
IRAFAAA	Leafhoppers		
IQAMARA	Lygus bugs		
ILAAABA	Mites		

2-CARBOMETHOXY-1-METHYLVINYL DIMETHYL PHOSPHATE, ALPHA ISOMER AND RELATED COMPOUNDS

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
/28008AA /13052AA	Anise, Fennel Broccoli Raab		Tolerance not located. 3 day preharvest interval through 0.5 pound per acre for foliar application. Do not apply to broccoli raab when temperatures are above 75 F (23.9 C).
IRACAAA	Aphids	[SLN] 0.125-0.25 lb/A (4 lb/gal EC)	SLN - Use limited to CA. Foliar application. Apply in a minimum of 10 gallons of water per acre. Repeat at 5 to 7 day intervals.
ITBCCFA	Armyworm	[SLN] 0.25-0.5 lb/A (4 lb/gal EC)	
ITBCCSA	Cabbage looper		
IOAAAEJ	Dipterous leafminers (adults)		
ITBJAHA	Imported cabbageworm		
IQAMARA	Lygus bugs		
/04001AA /04003AA	Apple Pear		0.5 ppm 1 day preharvest interval through 3 pounds per acre for foliar application of emulsifiable concentrate and soluble concentrate/liquid formulations (apple and pear). 1 day preharvest interval through 1.2 pound per acre for foliar application of dust formulation (apple). For apple, do not apply under conditions of high relative humidity and high temperature. Applications of mevinphos may cause injury to golden delicious, Staymen and related varieties.
IRACAAA ILAAABA	Aphids Mites	0.125-0.25 lb/100 gal [max 1,200 gal/A] (2, 4 lb/gal EC) (10.3 lb/gal SC/L)	Foliar application.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Apple cluster (continued)		
IVABAAA	Grasshoppers	0.25-0.333 lb/100 gal [max 900 gal/A] (2, 4 lb/gal EC) (10.3 lb/gal SC/L)	
IQAMARA	Lygus bugs		
ITBUAPA	Redbanded leaf-roller		
/04001AA	(apple)		
IRACAAA	Aphids	1-1.2 lb/A (2% D)	Foliar application.
ILAAABA	Mites		
/13018AA	Artichoke		1 ppm 2 day preharvest interval through 1 pound per acre for foliar application.
IRACAAA	Aphids	0.25 lb/A (2% D) or 0.125-0.25 lb/A (2, 4 lb/gal EC) (10.3 lb/gal SC/L)	Foliar application.
ITBLABA	Artichoke plume moth	0.5-1 lb/A (2, 4 lb/gal EC) (10.3 lb/gal SC/L)	
/28001AA	Beans		0.25 ppm 1 day preharvest interval through 0.5 pound per acre for foliar application.
IRACAAA	Aphids	0.125-0.25 lb/A (2% D) (2, 4 lb/gal EC)	Foliar application.

2-CARBOMETHOXY-1-METHYLVINYL DIMETHYL PHOSPHATE, ALPHA ISOMER AND RELATED COMPOUNDS

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Beans (continued)		
IVABAAA	Grasshoppers	0.25-0.5 lb/A (2% D) (2, 4 lb/gal EC) (4, 10.3 lb/gal SC/L)	
IRAFAAA	Leafhoppers		
INAPAFA	Mexican bean beetle		
ILAAABA	Mites		
/28002AA	Beets (including tops)		1 ppm (beets, garden (including tops)) 3 day preharvest interval through 0.5 pound per acre for foliar application.
IRACAAA	Aphids	0.25 lb/A (2% D) or 0.125-0.5 lb/A (2, 4 lb/gal EC) (4, 10.3 lb/gal SC/L)	Foliar application.
ITBCCSA	Cabbage looper	0.5 lb/A (2% D) or 0.25-0.5 lb/A (2, 4 lb/gal EC) (4, 10.3 lb/gal SC/L)	
ITBCCZA	Climbing cutworms		
IOAAAEJ	Dipterous leafminers (adults)		
IQALAHA	False chinch bug		
IVABAAA	Grasshoppers		
ITBJAHA	Imported cabbageworm		
IRAFAAA	Leafhoppers		
ILAAABA	Mites		
ITABACA	Saltmarsh caterpillar		

2-CARBOMETHOXY-1-METHYLVINYL DIMETHYL PHOSPHATE, ALPHA ISOMER AND RELATED COMPOUNDS

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
/22017BA	Bermudagrass (seed crop)		Tolerance not located. 7 day preharvest interval through 1 pound per acre. Do not pasture or use treated crop for feed, food, forage, or bedding purposes.
ILAVANA	Banks grass mite	[SLN] 0.75-1 lb/A (4 lb/gal EC)	SLN - Use limited to CA. Apply in 5 to 10 gallons of water by aircraft and in 10 to 30 gallons of water per acre by ground equipment.
ILAJARA	Bermudagrass mite		
IRANAAA	Fulgorid planthoppers		
IRAWAAA	Mealybugs		
IRABAAA	Whiteflies		
/23001AA	Birdsfoot Trefoil		1 ppm (forage, hay) 2 day preharvest interval through 0.5 pound per acre for foliar application.
ITBJADA	Alfalfa caterpillar	[SLN] 0.125-0.25 lb/A (4 lb/gal EC)	SLN - Use limited to NY. Foliar application.
IRACAAA	Aphids		
INASBWC	Alfalfa weevil (larvae)	[SLN] 0.25-0.5 lb/A (4 lb/gal EC) NY810002	
ITBCABA	Cutworms		
IVABAAA	Grasshoppers		
IRAFAAA	Leafhoppers		
IQAMARA	Lygus bugs		
ILAAABA	Mites		
/13005AA	Broccoli		1 ppm 3 day preharvest interval through 1 pound per acre for foliar application.
/13006AA	Brussels Sprouts		
/13007AA	Cabbage		
/13008AA	Cauliflower		
/13009AA			
/13011AA			
IRACAAA	Aphids	0.125-0.25 lb/A (2% D) (2, 4 lb/gal EC) (25.4% EC)** (4, 10.3 lb/gal SC/L)	Foliar application.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Broccoli cluster (continued)		
		1 lb/A (2% D) (2, 4 lb/gal EC) (4, 10.3 lb/gal SC/L)	Foliar application. Apply when infestations are difficult to control.
ITBCCSA ITBCCZA IOAAAEJ IVABAAA ITBJAHA IRAFAAA IQAMARA ITABACA	Cabbage looper Climbing cutworms Dipterous leafminers (adults) Grasshoppers Imported cabbageworm Leafhoppers Lygus bugs Saltmarsh caterpillar	0.25-0.5 lb/A (2% D) (2, 4 lb/gal EC) (25.4% EC)** (4, 10.3 lb/gal SC/L) 1 lb/A (2% D) (2, 4 lb/gal EC) (4, 10.3 lb/gal SC/L)	Foliar application.
	Broccoli Raab		See Anise, Fennel cluster.
/14003AA	Carrot		0.25 ppm 2 day preharvest interval through 0.5 pound per acre for foliar application.
IRACAAA	Aphids	0.25 lb/A (2% D) or 0.125-0.5 lb/A (2, 4 lb/gal EC) (4, 10.3 lb/gal SC/L)	Foliar application.

2-CARBOMETHOXY-1-METHYLVINYL DIMETHYL PHOSPHATE, ALPHA ISOMER AND RELATED COMPOUNDS

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Carrot (continued)		
ITBCCZA	Cabbage looper	0.5 lb/A (2% D) or 0.25-0.5 lb/A (2, 4 lb/gal EC) (4, 10.3 lb/gal SC/L)	
ITBCCZA	Climbing cutworms		
IOAAAEJ	Dipterous leafhoppers (adults)		
IRAFAAA	Leafhopper		
IQAMARA	Lygus bugs		
ILAAABA	Mites		
ITABACA	Saltmarsh caterpillar		
	Cauliflower		See Broccoli cluster.
/13002AA	Celery		1 ppm 3 day preharvest interval through 0.5 pound per acre for foliar application. 5 day preharvest interval through 1 pound per acre for foliar application.
IRACAAA	Aphids	0.25 lb/A (2% D) or 0.125-0.25 lb/A (2, 4 lb/gal EC) (10.3 lb/gal SC/L)	Foliar application.
		1 lb/A (2% D) (2, 4 lb/gal EC) (10.3 lb/gal SC/L)	Foliar application. Apply when infestations are difficult to control.
ITBCCSA	Cabbage looper	0.25-0.5 lb/A (2% D) (2, 4 lb/gal EC) (10.3 lb/gal SC/L)	Foliar application.
IOAAAEJ	Dipterous leafminers (adults)		
IRACAAA	Leafhoppers		
IQAMARA	Lygus bugs		
ILAAABA	Mites		
ITABACA	Saltmarsh caterpillar		

2-CARBOMETHOXY-1-METHYLVINYL DIMETHYL PHOSPHATE, ALPHA ISOMER AND RELATED COMPOUNDS

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Celery (continued)		
		1 lb/A (2% D) (2, 4 lb/gal EC) (10.3 lb/gal SC/L)	Foliar application. Apply when infestations are difficult to control.
/05002AA	Cherry, Sour		1 ppm 2 day preharvest interval through 2.5 pound per acre for foliar application.
IRACAAA ILAAABA	Aphids Mites	0.25-0.333 lb/A [max 750 gal/A] (2, 4 lb/gal EC) (10.3 lb/gal SC/L)	Foliar application.
/13053AA	Chinese Broccoli (gai lon)		1 ppm (broccoli) 3 day preharvest interval through 1 pound per acre for foliar application. Do not make more than 3 applications.
IRACCUA	Green peach aphid	[SLN] 1 lb/A (4 lb/gal EC)	SLN - Use limited to CA. Foliar application. Apply in 10 gallons of water per acre by aircraft and 100 gallons of water per acre by ground equipment.
/13010AA	Chinese Cabbage (including napa or nappa cabbage, bok choy, pak choi, gai choy, and mizunal)		1 ppm (cabbage) 3 day preharvest interval through 0.25 pound per acre for foliar application.
IRACAAA ITBCCSA ITBCCZA ITBJAHA	Aphids Cabbage looper Climbing cutworms Imported cabbageworm	[SLN] 0.125-0.25 lb/A (4 lb/gal EC) (10.3 lb/gal SC/L)	SLN - Use limited to CA. Foliar application. Apply in a minimum of 10 gallons of water per acre by aircraft or in a minimum of 25 gallons of water per acre by ground equipment.

2-CARBOMETHOXY-1-METHYLVINYL DIMETHYL PHOSPHATE, ALPHA ISOMER AND RELATED COMPOUNDS

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Clover		See Alfalfa cluster.
/13009AA /13011AA	Collards Kale		1 ppm 3 day preharvest interval through 0.5 pound per acre for foliar application. 7 day preharvest interval through 1 pound per acre for foliar application.
		Refer to Broccoli cluster for additional information.	
/28005AA	Corn		0.25 ppm (corn, grain, field, pop, sweet (K+CWHR)) 1 ppm (forage) 1 day preharvest interval through 0.5 pound per acre for foliar application.
IRACAAA ILAAABA	Aphids Mites	0.25-0.5 lb/A (2% D) or 0.125-0.5 lb/A (2, 4 lb/gal EC) (10.3 lb/gal SC/L)	Foliar application.
/10010AA	Cucumber		0.2 ppm 1 day preharvest interval through 0.5 pound per acre for foliar application.
IRACAAA	Aphids	0.25 lb/A (2% D) or 0.125-0.25 lb/A (2, 4 lb/gal EC) (10.3 lb/gal SC/L)	Foliar application.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Cucumber (continued)		
IVABAAA IRAFAAA ILAAABA	Grasshoppers Leafhoppers Mites	0.25-0.5 lb/A (2% D) (2, 4 lb/gal EC) (10.3 lb/gal SC/L)	
/11001AA /11003AA	Eggplant		0.25 ppm 2 day preharvest interval through 0.5 pound per acre for foliar application.
IRACAAA	Aphids	0.25 lb/A (2% D) or 0.125-0.25 lb/A (2, 4 lb/gal EC) (4, 10.3 lb/gal SC/L)	Foliar application.
IVABAAA IRAFAAA ILAAABA	Grasshoppers Leafhoppers Mites	0.5 lb/A (2% D) or 0.25-0.5 lb/A (2, 4 lb/gal EC) (4, 10.3 lb/gal SC/L)	

2-CARBOMETHOXY-1-METHYLVINYL DIMETHYL PHOSPHATE, ALPHA ISOMER AND RELATED COMPOUNDS

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
/02002AA /02004AA /02006AA	Grapefruit Lemon Orange		0.2 ppm (citrus) 1 day preharvest interval through 2 pounds per acre for foliar application. Allow a minimum of 7 days between treatments.
IRACAAA	Aphids	0.5-1 lb/200 or more gal/A (2, 4 lb/gal EC) (10.3 lb/gal SC/L)	Foliar application.
ITBCCUA	Citrus cutworm	2 lb/1,200 gal/A (2, 4 lb/gal EC) (10.3 lb/gal SC/L)	
ITAHABA	Pink scavenger caterpillar		
ITBCCBA	Variegated cutworm		
ITAXAFA	Western tussock moth (larvae)		
ITBUAGA	Fruittree leaf-roller	1 lb/500 gal/A (2, 4 lb/gal EC) (10.3 lb/gal SC/L)	
ITBUBCA	Omnivorous leaf-roller		
ITBUALA	Orange tortrix		
/01014AA	Grapes		0.5 ppm 2 day preharvest interval through 0.5 pound per acre for foliar application. 5 day preharvest interval through 1 pound per acre for foliar application.
IRACAAA	Aphids	0.25-0.5 lb/A (2% D) (2, 4 lb/gal EC) (10.3 lb/gal SC/L)	Foliar application.

2-CARBOMETHOXY-1-METHYLVINYL DIMETHYL PHOSPHATE, ALPHA ISOMER AND RELATED COMPOUNDS

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Grapes (continued)		
IZZZAQA	Leaffolders	0.5-1 lb/A (2% D) (2, 4 lb/gal EC) (10.3 lb/gal SC/L)	
IRAFAAA	Leafhoppers		
IQAMARA	Lygus bugs		
ILAAABA	Mites		
ITBUAPA	Redbanded leafroller		
	Lemon		See Grapefruit cluster.
/13020AA	Lettuce		0.5 ppm 2 day preharvest interval through 0.5 pound per acre for foliar application. 4 day preharvest interval through 1 pound per acre for foliar application.
IRACAAA	Aphids	0.25 lb/A (2% D) or 0.125-0.25 lb/A (2, 4 lb/gal EC) (4, 10.3 lb/gal SC/L)	Foliar application.
		1 lb/A (2% D) (2, 4 lb/gal EC) (4, 10.3 lb/gal SC/L)	Foliar application. Apply when infestations are difficult to control.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Lettuce (continued)		
ITBCCSA	Cabbage looper	0.25-0.5 lb/A (2% D) or 0.125-0.5 lb/A (2, 4 lb/gal EC) (4, 10.3 lb/gal SC/L)	Foliar application.
ITBCCZA	Climbing cutworms		
ITBCBOA	Corn earworm		
IOAAAEJ	Dipterous leafminers		
IQALAHA	False chinch bug		
IVABAAA	Grasshoppers		
ITBJAHA	Imported cabbageworm		
IQAMARA	Lygus bugs		
ILAAABA	Mites	1 lb/A (2% D) (2, 4 lb/gal EC) (4, 10.3 lb/gal SC/L)	Foliar application. Apply when infestations are difficult to control.
ITABACA	Saltmarsh caterpillar		
IMOAAAA	Thrips		
/10001AA /10008AA	Melons (including cantaloupes, honeydew melons, muskmelons, and watermelons)		0.5 ppm (melons (including cantaloupes, honeydew melon, and muskmelon, determined on the edible portion with rind removed)) (watermelon) 1 day preharvest interval through 0.5 pound per acre for foliar application.
IRACAAA	Aphids	0.25 lb/A (2% D) or 0.125-0.25 lb/A (2, 4 lb/gal EC) (4, 10.3 lb/gal SC/L)	Foliar application.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Melons (continued)		
ITBCCSA	Cabbage looper	0.25-0.5 lb/A (2% D) (2, 4 lb/gal EC) (4, 10.3 lb/gal SC/L)	
ITBCCSA	Climbing cutworms		
IOAAAEJ	Dipterous leafminers (adults)		
IQALAHA	False chinch bug		
IVABAAA	Grasshoppers		
IRAFAAA	Leafhoppers		
IQAMARA	Lygus bugs		
ILAAABA	Mites		
ITABACA	Saltmarsh caterpillar		
/10008AA	(Watermelons)		
ITAAAIA	Rindworms (including cabbage looper, cutworms, saltmarsh caterpillar, and tobacco budworm)	0.25 lb/A (2% D) (2, 4 lb/gal EC) (10.3 lb/gal SC/L)	Foliar application.
/08027AA	Mint		Tolerance not located. 30 day preharvest interval through 0.5 pound per acre for foliar application.
IRACAAA	Aphids	0.5 lb/A (2 lb/gal EC)	Foliar application.
ITBCABA	Cutworms		
ITAAAOA	Loopers		
ILAAABA	Mites		
/13021AA	Mustard Greens		1 ppm (mustard greens, turnip tops) 0.25 ppm (turnips) 3 day preharvest interval through 0.5 pound per acre for foliar application.
/28022AA	Turnips (including tops)		
IRACAAA	Aphids	0.25 lb/A (2% D) or 0.125-0.25 lb/A (2, 4 lb/gal EC) (25.4% EC) (4, 10.3 lb/gal SC/L)	Foliar application.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Mustard Greens cluster (continued)		
ITBCCSA	Cabbage looper	0.25-0.5 lb/A (2% D) (2, 4 lb/gal EC) (25.4% EC) (4, 10.3 lb/gal SC/L)	
IOAAAEJ	Dipterous leafminers (adults)		
IQALAHA	False chinch bug		
IVABAAA	Grasshoppers		
ITBJAHA	Imported cabbageworm		
IRAFAAA	Leafhoppers		
ILAAABA	Mites		
/15015AA	Okra		0.25 ppm 1 day preharvest interval through 0.5 pound per acre for foliar application.
IRACAAA	Aphids	0.125-0.5 lb/A (2, 4 lb/gal EC) (10.3 lb/gal SC/L)	Foliar application.
ITBCCZA	Climbing cutworms	0.25-0.5 lb/A (2, 4 lb/gal EC) (4, 10.3 lb/gal SC/L)	
ITBCBOA	Corn earworm		
IQAQACA	Green stink bug		
ILAAABA	Mites		
ITBCATA	Velvetbean caterpillar		
/14011AA	Onions (including green onions)		0.25 ppm (onions (green)) 1 day preharvest interval through 0.5 pound per acre for foliar application.
ITBCCZA	Climbing cutworms	0.25-0.5 lb/A (2% D) (2, 4 lb/gal EC) (10.3 lb/gal SC/L)	Foliar application.
IMOAAAA	Thrips		
	Orange		See Grapefruit cluster.

2-CARBOMETHOXY-1-METHYLVINYL DIMETHYL PHOSPHATE, ALPHA ISOMER AND RELATED COMPOUNDS

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
/05004AA /05005AA	Peach Plum		1 ppm 1 day preharvest interval through 2.5 pounds per acre for foliar application. For peach, 4 day reentry interval for any activity requiring substantial contact with the treated foliage.
IRACAAA ILAAABA	Aphids Mites	0.125-0.25 lb/100 gal [max 750 gal/A] (2, 4 lb/gal EC) (10.3 lb/gal SC/L)	Foliar application.
IVABAAA IQAMARA ITBUAPA	Grasshoppers Lygus bugs Redbanded leafroller	0.25-0.333 lb/100 gal [max 750 gal/A] (2, 4 lb/gal EC) (10.3 lb/gal SC/L)	
	Pear		See Apple cluster.
/28016AA	Peas		0.25 ppm (peas) 1 ppm (pea vines) 1 day preharvest interval through 0.5 pound per acre for foliar application.
IRACAAA	Aphids	0.25 lb/A (2% D) or 0.125-0.25 lb/A (2, 4 lb/gal EC) (10.3 lb/gal SC/L)	Foliar application.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Peas (continued)		
ITBCCZA IVABAAA IRAFAAA ILAAABA	Climbing cutworms Grasshoppers Leafhoppers Mites	0.25-0.5 lb/A (2% D) (2, 4 lb/gal EC) (10.3 lb/gal SC/L)	
/11003AA	Peppers		0.25 ppm 2 day preharvest interval through 0.5 pound per acre for foliar application. 4 day preharvest interval through 1 pound per acre for foliar application. If the crop is to be grown for processing do not apply more than 0.5 pound per acre per application.
IRACCUA	Green peach aphid	0.5-1 lb/A (4 lb/gal EC)	Use limited to CA. Foliar application. For organo phosphate resistant green peach aphids.
		Refer to Eggplant for additional use information.	
/14013AA	Potato		0.25 ppm 1 day preharvest interval through 0.25 pound per acre for foliar application. 4 day preharvest interval through 1 pound per acre for foliar application.
IRACAAA	Aphids	0.25 lb/A (2% D) or 0.125-0.25 lb/A (2, 4 lb/gal EC). (10.3 lb/gal SC/L)	Foliar application.

EPA Compendium of Acceptable Uses

2-CARBOMETHOXY-1-METHYLVINYL DIMETHYL PHOSPHATE, ALPHA ISOMER AND RELATED COMPOUNDS

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Potato (continued)		
IVABAAA	Grasshoppers	0.25 lb/A (2% D) (2, 4 lb/gal EC) (4, 10.3 lb/gal SC/L)	
IRAFAAA	Leafhoppers		
ILAAABA	Mites		
IRACCUA	Green peach aphid	1 lb/A (4 lb/gal EC)	
/01006AA	Raspberry		1 ppm 3 day preharvest interval through 0.64 pound per acre for foliar application.
IRACAAA	Aphids	0.125-0.25 lb/100 gal [max 200 gal/A] (2, 4 lb/gal EC) (10.3 lb/gal SC/L)	Foliar application.
ITBUAGA	Fruittree leafroller	0.25-0.32 lb/100 gal [max 200 gal/A] (2, 4 lb/gal EC) (10.3 lb/gal SC/L)	
IRAFAAA	Leafhoppers		
ILAAABA	Mites		
ITBUALA	Orange tortrix		

EPA Compendium of Acceptable Uses

2-CARBOMETHOXY-1-METHYLVINYL DIMETHYL PHOSPHATE, ALPHA ISOMER AND RELATED COMPOUNDS

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
/13003AA	Red Chicory (tops) Radicchio		0.5 ppm (chicory, red (tops) (also known as radicchio)) 7 day preharvest interval through 1 pound per acre for foliar application. Do not make more than 3 applications.
IRACCUA	Green peach aphid	[SLN] 1 lb/A (4 lb/gal EC)	SLN - Use limited to CA. Foliar application. Apply in 10 gallons of water per acre by aircraft and 100 gallons of water per acre by ground equipment.
/15026BA	Sesame (seed crop)		Tolerance not located. This use pattern is expired and the state agency requested it remain so. No preharvest interval through 0.5 pound per acre.
IRACAAA	Aphids	[SLN] 0.5 lb/A (4 lb/gal EC)	SLN - Use limited to CA. Apply by aircraft only in a minimum of 5 gallons of water per acre. Apply at the flower stage.
/28019AA	Sorghum		1 ppm (grain, forage) 3 day preharvest interval through 0.5 pound per acre for foliar application.
IRACAAA	Aphids	0.25 lb/A (2% D) or 0.125-0.25 lb/A (4 lb/gal EC) (4, 10.3 lb/gal SC/L)	Foliar application.
ITBCBOA ITAAAMA	Corn earworm Webworms	0.5 lb/A (2% D) or 0.25-0.5 lb/A (2, 4 lb/gal EC) (4, 10.3 lb/gal SC/L)	

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Sorghum (continued)		
ITBCCOA	Fall armyworm	0.5 lb/A (2% D) (2, 4 lb/gal EC) (4, 10.3 lb/gal SC/L)	
/13024AA	Spinach		1 ppm 4 day preharvest interval through 0.5 pound per acre for foliar application. 7 day preharvest interval through 1 pound per acre for foliar application.
IRACAAA	Aphids	0.25 lb/A (2% D) or 0.125-0.25 lb/A (2, 4 lb/gal EC) (4, 10.3 lb/gal SC/L)	Foliar application.
		1 lb/A (2% D) (2, 4 lb/gal EC) (4, 10.3 lb/gal SC/L)	Foliar application. Apply when infestations are difficult to control.
ITBCCSA ITBCCZA IOAAAEJ IQALAHA IVABAAA ITBJAHA IRAFAAA ILAAABA ITABACA	Cabbage looper Climbing cutworms Dipterous leafminers (adults) False chinch bug Grasshoppers Imported cabbageworm Leafhoppers Mites Saltmarsh caterpillar	0.25-0.5 lb/A (2% D) (2, 4 lb/gal EC) (4, 10.3 lb/gal SC/L)	Foliar application.
		1 lb/A (2% D) (2, 4 lb/gal EC) (4, 10.3 lb/gal SC/L)	Foliar application. Apply when infestations are difficult to control.

2-CARBOMETHOXY-1-METHYLVINYL DIMETHYL PHOSPHATE, ALPHA ISOMER AND RELATED COMPOUNDS

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
/10013AA	Squash, Summer		0.25 ppm 1 day preharvest interval through 0.5 pound per acre for foliar application.
IRACAAA	Aphids	0.25 lb/A (2% D) or 0.125-0.25 lb/A (2, 4 lb/gal EC) (4, 10.3 lb/gal SC/L)	Foliar application.
ITBCCSA	Cabbage looper	0.25-0.5 lb/A (2% D) (2, 4 lb/gal EC) (4, 10.3 lb/gal SC/L)	
ITBCCZA	Climbing cutworms		
IOAAAEJ	Dipterous leafminers (adults)		
IQALAHA	False chinch bug		
IVABAAA	Grasshoppers		
IRAFAAA	Leafhoppers		
IQAMARA	Lygus bugs		
ILAAABA	Mites		
ITABACA	Saltmarsh caterpillar		
/01016AA	Strawberry		1 ppm 1 day preharvest interval through 0.5 pound per acre for foliar application. 2 day preharvest interval through 1 pound per acre for foliar application.
IRACAAA	Aphids	0.25 lb/A (2% D) or 0.125-0.25 lb/100 gal (2, 4 lb/gal EC) (10.3 lb/gal SC/L)	Foliar application.
ILAAABA	Mites		

2-CARBOMETHOXY-1-METHYLVINYL DIMETHYL PHOSPHATE, ALPHA ISOMER AND RELATED COMPOUNDS

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Strawberry (continued)		
		1 lb/A (2% D) or 1 lb/100 gal [max 100 gal/A] (2, 4 lb/gal EC) (10.3 lb/gal SC/L)	Foliar application. Apply when infestations are difficult to control.
IVABAAA IQAMARA ITABACA ITBUBWA	Grasshoppers Lygus bugs Saltmarsh caterpillar Strawberry leafroller	0.25-0.5 lb/A (2% D) or 0.25-0.5 lb/100 gal [max 100 gal/A] (2, 4 lb/gal EC) (10.3 lb/gal SC/L)	Foliar application.
		1 lb/A (2% D) or 1 lb/100 gal [max 100 gal/A] (2, 4 lb/gal EC) (10.3 lb/gal SC/L)	Foliar application. Apply when infestations are difficult to control.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
/11005AA	Tomato		0.2 ppm 1 day preharvest interval through 0.5 pound per acre for foliar application.
IRACAAA	Aphids	0.25 lb/A (2% D) or 0.125-0.25 lb/A (2, 4 lb/gal EC) (4, 10.3 lb/gal SC/L)	Foliar application.
IVABAAA IRAFAAA ILAAABA	Grasshoppers Leafhoppers Mites	0.25-0.5 lb/A (2% D) (2, 4 lb/gal EC) (4, 10.3 lb/gal SC/L)	
	Turnips (including tops)		See Mustard Greens cluster.
/03009AA	Walnut		0.25 ppm (determined on the nut meats with shell removed) 1 day preharvest interval through 2.5 pounds per acre for foliar application.
IRACAAA	Aphids	0.125-0.25 lb/100 gal [max 1,000 gal/A] (2, 4 lb/gal EC) (10.3 lb/gal SC/L)	Foliar application.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Walnut (continued)		
ITBUAGA ILAAABA ITANAWA ITBUALA	Fruittree leaf-roller Mites Omnivorous looper Orange tortrix	0.25 lb/100 gal [max 1,000 gal/A] (2, 4 lb/gal EC) (10.3 lb/gal SC/L)	
	TERRESTRIAL NONFOOD CROP		
	(Ornamental Plants and Forest Trees)		
/31003AA	Ornamental Flowering Plants (field grown)		Make 1 application per year.
IRACAAA IQAMARA	Aphids Lygus bugs	[SLN] 0.25 lb/A (4 lb/gal EC)	SLN - Use limited to CA. Foliar application. Apply in a minimum of 10 gallons of water per acre by aircraft only.

2-CARBOMETHOXY-1-METHYLVINYL DIMETHYL PHOSPHATE, ALPHA ISOMER AND RELATED COMPOUNDS

GREENHOUSE FOOD CROP

(Agricultural Crops)

General Warnings and Limitations: Apply in a closed greenhouse (close all doors, windows, and ventilators). Lock or barricade all entrances, post warning signs, and take whatever precautions are necessary to prevent unprotected humans and domestic animals from entering the treated area. The operator must wear a full face mask of a type found adequate for mevinphos protection.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
/13020CA	Lettuce		1 ppm 10 day preharvest interval through 1.167 pounds per 50,000 square feet for foliar application to greenhouse grown plants.
IRACAAA	Aphids	0.48-1.167 lb/50,000 sq.ft (2, 4 lb/gal EC) (10.3 lb/gal SC/L)	Foliar application to greenhouse grown plants. Apply when the greenhouse ventilators can remain closed for 2 hours without endangering the crop from high temperatures. Keep the ventilators closed tightly for a minimum of 2 hours. If the application is made in the late afternoon, the greenhouse can be kept closed all night. Ventilate for 1 hour to render the air safe for reentry.
ITBCCSA	Cabbage looper		
ITBCCZA	Climbing cutworms		
ITBCBOA	Corn earworm		
IOAAAEJ	Dipterous leaf-miners (adults)		
IQALAHA	False chinch bug		
IVABAAA	Grasshoppers		
ITBJAHA	Imported cabbageworm		
IQAMARA	Lygus bugs		
ILAAABA	Mites		
ITABACA	Saltmarsh caterpillar		
IMOAAAA	Thrips		

2-CARBOMETHOXY-1-METHYLVINYL DIMETHYL PHOSPHATE, ALPHA ISOMER AND RELATED COMPOUNDS

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	AQUATIC FOOD CROP		
	(Agricultural Crops)		
	General Warnings and Limitations: Mevinphos is toxic to fish and wildlife. Effluent may be hazardous to aquatic organisms. Do not contaminate water by cleaning of equipment or disposal of wastes.		
/13027AA	Watercress		2 ppm 1 day preharvest interval through 0.5 pound per acre for foliar application. Do not make more than 5 applications. Do not apply to a bed not in full growth or without adequate canopy cover.
IRACAAA	Aphids	[SLN] 0.5 lb/A (4 lb/gal EC)	SLN - Use limited to AL, FL, MD, PA, and WV. Foliar application. Apply in 25 to 125 gallons of water per acre by ground equipment. Apply when pests first appear and repeat at 2 to 7 day intervals.
	AQUATIC NONFOOD		
	(Aquatic Sites)		
/65026MA	Sewage Disposal Plants		
IOBCAAC	Moth flies (larvae)	0.35 lb actual or 1 gal of 3.69% RTU or 1 gal of 5% RTU/100 gal of sewage/minute (2 lb/gal EC) (3.69%, 5% RTU)	Water treatment. Apply to the sewage flowing to trickling filters.
IOBCAAH	Moth flies (pupae)		

2-CARBOMETHOXY-1-METHYLVINYL DIMETHYL PHOSPHATE, ALPHA ISOMER AND RELATED COMPOUNDS

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Sewage Disposal Plants (continued)		
		0.05 lb actual or 18 fl.oz of 3.64% RTU or 18 fl.oz of 5% RTU/100 gal of sewage (2 lb/gal EC) (3.64%, 5% RTU)	Water treatment. Apply to sewage in flooded trickling filters. Close the gate from the filter to the secondary clarifier and raise the sewage level in the filter to the rock surface. Add at a number of points around the sides of the filter. Allow the arms of the filter to make several revolutions for distribution of the material. The contact period is governed by the extent of the infestation, however, a minimum of 5 hours is required. At the end of the contact period, the filter can be returned to normal operation by opening the gate from the filter to the secondary clarifier.
	AERIAL, MOTHPROOFING AND TANK MIX APPLICATIONS		
9001500 AAAAAAA	Aerial Application		
	--	Refer to TERRESTRIAL FOOD CROP (Agricultural Crops) All sites TERRESTRIAL NONFOOD CROP (Ornamental Plants and Forest Trees) All sites	

2-CARBOMETHOXY-1-METHYLVINYL DIMETHYL PHOSPHATE, ALPHA ISOMER AND RELATED COMPOUNDS

Listing of Registered Pesticide Products by Formulation

&299.9901 100% technical chemical

2-carbomethoxy-1-methylvinyl dimethyl phosphate, alpha isomer and related compounds (015801)
000352-00455 002498-00079*
*jacket currently unavailable for review

&002.0003 2% dust

2-carbomethoxy-1-methylvinyl dimethyl phosphate, alpha isomer and related compounds (015801)
000279-01364 000279-01624# 000352-00472 001202-00119**
001526-00418* 001812-00104 002459-00090* 005481-00249
005905-00297 009859-00181** 044317-00013*
*jacket currently unavailable for review
**cancelled
#suspended

&101.0012 1 lb/gal emulsifiable concentrate

2-carbomethoxy-1-methylvinyl dimethyl phosphate, alpha isomer and related compounds (015801); endosulfan (079401) plus xylene (086802)
034704-00187* 051036-00056***
*jacket currently unavailable for review
***no pm listing, unavailable for review

2-carbomethoxy-1-methylvinyl dimethyl phosphate, alpha isomer and related compounds (015801); endosulfan (079401) plus xylene range aromatic solvent (086803)
000279-02220***
***no pm listing, unavailable for review

&102.0012 2 lb/gal emulsifiable concentrate

2-carbomethoxy-1-methylvinyl dimethyl phosphate, alpha isomer and related compounds (015801) plus petroleum distillate (063503)
000201-00177* 002459-00091* 005481-00218
*jacket currently unavailable for review

2-carbomethoxy-1-methylvinyl dimethyl phosphate, alpha isomer and related compounds (015801) plus xylene (086802)
000352-00474 005905-00298 040831-00083

2-carbomethoxy-1-methylvinyl dimethyl phosphate, alpha isomer and related compounds (015801) plus xylene range aromatic solvent (086803)
000279-01227#
#suspended

&104.0012 4 lb/gal emulsifiable concentrate

2-carbomethoxy-1-methylvinyl dimethyl phosphate, alpha isomer and related compounds (015801)
000352-00471 002935-00167 005481-00113 006973-00012

2-CARBOMETHOXY-1-METHYLVINYL DIMETHYL PHOSPHATE, ALPHA ISOMER AND RELATED COMPOUNDS

Listing of Registered Pesticide Products by Formulation (continued)

4 lb/gal emulsifiable concentrate (continued)

(000201-00289)## AL850007 CA760180 CA780079 CA800180
CA810003 CA860063 CA860073 FL840025
PA850003 WV850002
##transferred to 000352-00471

2-carbomethoxy-1-methylvinyl dimethyl phosphate, alpha isomer and related compounds (015801) plus aromatic petroleum derivative solvent (006501)
001526-00390* 010163-00051* 040831-00083 040831-00112*
051036-00052*
*jacket currently unavailable for review

(001526-00390) AZ790033

2-carbomethoxy-1-methylvinyl dimethyl phosphate, alpha isomer and related compounds (015801) plus aromatic petroleum distillate (006601)
001202-00259**
**cancelled

2-carbomethoxy-1-methylvinyl dimethyl phosphate, alpha isomer and related compounds (015801) plus petroleum distillate (063503)
000279-01452** 000279-01692#
**cancelled
#suspended

(000279-01452) AZ790015

2-carbomethoxy-1-methylvinyl dimethyl phosphate, alpha isomer and related compounds (015801) plus xylene (086802)
000352-00471 001202-00261** 002749-00110** 007001-00100
010163-00009** 011656-00026 034704-00087 034704-00169
040831-00084
**cancelled

2-carbomethoxy-1-methylvinyl dimethyl phosphate, alpha isomer and related compounds (015801) plus xylene range aromatic solvent (086803)
000682-00023* 005905-00228 005905-00308
*jacket currently unavailable for review

&225.4012 25.4% emulsifiable concentrate

2-carbomethoxy-1-methylvinyl dimethyl phosphate, alpha isomer and related compounds (015801) plus petroleum distillate (063503)
001812-00082*
*jacket currently unavailable for review

Listing of Registered Pesticide Products by Formulation (continued)

&102.0015 2 lb/gal soluble concentrate/liquid

2-carbomethoxy-1-methylvinyl dimethyl phosphate, alpha isomer and related compounds (015801) plus aromatic petroleum derivative solvent (006501)
009859-00144**
**cancelled

&104.0015 4 lb/gal soluble concentrate/liquid

2-carbomethoxy-1-methylvinyl dimethyl phosphate, alpha isomer and related compounds (015801)
001202-00258** 005481-00114* 010226-00010
*jacket currently unavailable for review
**cancelled

2-carbomethoxy-1-methylvinyl dimethyl phosphate, alpha isomer and related compounds (015801) plus isopropyl alcohol (047501)
006023-00033 010163-00049

&110.3015 10.3 lb/gal soluble concentrate/liquid

2-carbomethoxy-1-methylvinyl dimethyl phosphate, alpha isomer and related compounds (015801)
000352-00473 005481-00161 010163-00050**
**cancelled

(000201-00291)## CA810003
##transferred to 000352-00473

&203.6416 3.64% liquid-ready to use

2-carbomethoxy-1-methylvinyl dimethyl phosphate, alpha isomer and related compounds (015801) plus aromatic petroleum derivative solvent (006501)
002270-00697

&205.0016 5% liquid-ready to use

2-carbomethoxy-1-methylvinyl dimethyl phosphate, alpha isomer and related compounds (015801) plus aromatic petroleum distillate (006601)
007234-00128

2-carbomethoxy-1-methylvinyl dimethyl phosphate, alpha isomer and related compounds (015801) plus petroleum distillate (063503)
010827-00027

2-carbomethoxy-1-methylvinyl dimethyl phosphate, alpha isomer and related compounds (015801) plus xylene (086802)
003624-00160*
*jacket currently unavailable for review

2-CARBOMETHOXY-1-METHYLVINYL DIMETHYL PHOSPHATE, ALPHA ISOMER AND RELATED COMPOUNDS

Listing of Registered Pesticide Products by Formulation (continued)

9999999 State Label Registrations

AZ Reg. No.
001202-05003 001202-05011 001526-03811 001526-03812
002935-06555 002935-06571 005905-07952 007001-04376
011656-05720 011656-05745 011656-05749 011656-05972

CA Reg. No.
000201-05967 000201-05968 001202-05044 001202-05046
001202-05093 002935-06669 005481-07501 005481-07512
005905-04435 006023-03034 006973-03554 006973-03578
006973-03579 006973-03580 006973-04409 007001-07695
007001-07718 007001-07719 007001-07748 007001-07749
010972-05300 011369-08809 011656-04795 011656-05865
011656-05971 034704-04720 034704-04730 034704-05797
034704-05804 034704-05806

FL Reg. No.
009782-03649 032928-05924

IL Reg. No.
002270-03069

KS Reg. No.
002270-03070

MO Reg. No.
002270-05608

NY Reg. No.
038655-10414

OR Reg. No.
001871-08940 001871-08941

TX Reg. No.
010827-03427 033722-03276 037854-08292

2-CARBOMETHOXY-1-METHYLVINYL DIMETHYL PHOSPHATE, ALPHA ISOMER AND RELATED COMPOUNDS

Appendix A-1

Listing of Active Ingredient(s) Found in Combination with the Report Chemical

Chemical Code	Common Name (source)	EPA Acceptable Common/Chemical Name
079401	endosulfan	--

-- Use Common Name

IV. BIBLIOGRAPHY APPENDICES

Guide to Use of This Bibliography

1. CONTENT OF BIBLIOGRAPHY. This bibliography contains citations of all studies considered relevant by EPA in arriving at the positions and conclusions stated elsewhere in the Standard. Primary sources for studies in this bibliography have been the body of data submitted to EPA and its predecessor agencies in support of past regulatory decisions. Selections from other sources including the published literature, in those instances where they have been considered, will be included.

2. UNITS OF ENTRY. The unit of entry in this bibliography is called a "study." In the case of published materials, this corresponds closely to an article. In the case of unpublished materials submitted to the Agency, the Agency has sought to identify documents at a level parallel to the published article from within the typically larger volumes in which they were submitted. The resulting "studies" generally have a distinct title (or at least a single subject), can stand alone for purposes of review, and can be described with a conventional bibliographic citation. The Agency has attempted also to unite basic documents and commentaries upon them, treating them as a single study.

3. IDENTIFICATION OF ENTRIES. The entries in this bibliography are sorted numerically by "Master Record Identifier," or MRID, number. This number is unique to the citation, and should be used at any time specific reference is required. It is not related to the six-digit "Accession Number" which has been used to identify volumes of submitted studies; see paragraph 4(d)(4) below for a further explanation. In a few cases, entries added to the bibliography late in the review may be preceded by a nine-character temporary identifier. These entries are listed after all MRID entries. This temporary identifier number is also to be used whenever specific reference is needed.

4. FORM OF ENTRY. In addition to the Master Record Identifier (MRID), each entry consists of a citation containing standard elements followed, in the case of material submitted to EPA, by a description of the earliest known submission. Bibliographic conventions used reflect the standards of the American National Standards Institute (ANSI), expanded to provide for certain special needs.

a. Author. Whenever the Agency could confidently identify one, the Agency has chosen to show a personal author. When no individual was identified, the Agency has shown an identifiable laboratory or testing facility as author. As a last resort, the Agency has shown the first submitter as author.

b. Document Date. When the date appears as four digits with no question marks, the Agency took it directly from the document. When a four-digit date is followed by a question mark, the bibliographer deduced the date from evidence in the document. When the date appears as (19??), the Agency was unable to determine or estimate the date of the document.

c. Title. In some cases, it has been necessary for Agency bibliographers to create or enhance a document title. Any such editorial insertions are contained between square brackets.

d. Trailing Parentheses. For studies submitted to the Agency in the past, the trailing parentheses include (in addition to any self-explanatory text) the following elements describing the earliest known submission:

   (1) Submission Date. The date of the earliest known submission appears immediately following the word "received."

   (2) Administrative Number. The next element, immediately following the word "under," is the registration number, experimental use permit number, petition number or other administrative number associated with the earliest known submission.

   (3) Submitter. The third element is the submitter, following the phrase "submitted by." When authorship is defaulted to the submitter, this element is omitted.

(4) Volume Identification (Accession Numbers). The final element in the trailing parentheses identifies the EPA accession number of the volume in which the original submission of the study appears. The six-digit accession number follows the symbol "CDL," standing for "Company Data Library." This accession number is in turn followed by an alphabetic suffix which shows the relative position of the study within the volume. For example, within accession number 123456, the first study would be 123456-A; the second, 123456-B; the 26th, 123456-Z; and the 27th, 123456-AA.

OFFICE OF PESTICIDE PROGRAMS
REGISTRATION STANDARD BIBLIOGRAPHY
Citations Considered to be Part of the Data Base Supporting Registrations Under the Mevinphos Standard

MRID	CITATION
00022923	Hill, E.F.; Heath, R.G.; Spann, J.W.; et al. (1975) Lethal Dietary Toxicities of Environmental Pollutants to Birds: Special Scientific Report--Wildlife No. 191. (U.S. Dept. of Interior, Fish and Wildlife Service, Patuxent Wildlife Research Center; unpublished report)
00036987	Shell Chemical Corporation (1956) Analytical Methods for the Determination of OS 2046 Residues in or on Agricultural Crops. Summary of studies 092358-D and 092358-E. (Unpublished study received Jun 5, 1956 under PP0078; CDL:092358-B)
00036988	Shell Chemical Corporation (1956) Stability of OS 1046 Residues in Frozen Crops. (Unpublished study received Jun 5, 1956 under PP0078; CDL:092358-C)
00036989	Shell Development Company (1956) Determination of OS2046 in Agricultural Products and Animal Tissues: Enzyme Inhibition--Spectrophotometric Method. Method ARMS-C-12/56 (Tentative) dated May 15, 1956. (Unpublished study received Jun 5, 1956 under PP0078; CDL:092358-D)
00036990	Casida, J.E. (19??) Enzymatic Determination of OS 2046 in Agricultural Crops: Enzyme Inhibition--delta pH Method. (Unpublished study received Jun 5, 1956 under PP0078; prepared by Univ. of Wisconsin, submitted by Shell Chemical Co., Washington, D.C.; CDL:092358-E)
00036998	Shell Chemical Corporation (1957) Practicable Methods for Removing Excessive Residues of Phosdrin Insecticide. (Unpublished study received Apr 15, 1957 under PP0123; CDL:092404-F)
00044663	Stauffer Chemical Company (1963) Summary of Phosdrin Residues on Green Beans. (Unpublished study received Dec 9, 1966 under 476-1460; CDL:101405-A)
00054954	Spencer, E.Y.; Robinson, J.R. (1960) Metabolism of the systemic insecticide O,O-Dimethyl 1-carbomethoxy-1-propen-2-yl phosphate (Phosdrin) in the pea plant. Journal of Agricultural and Food Chemistry 8(4):293-295. (Also In unpublished submission received Jun 14, 1977 under 2498-79; submitted by Black Hawk Chemical Corp., Los Angeles, Calif.; CDL:230743-H)

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Citations Considered to be Part of the Data Base Supporting Registrations Under the Mevinphos Standard

MRID	CITATION
00089548	Casida, J.E.; Gatterdam, P.E.; Niedermeier, R.P.; et al. (1957) Residues and Toxicity Associated with Feeding Phosdrin Insecticide to Dairy Cattle. Progress rept. Mar 27, 1957. (Unpublished study received Apr 15, 1957 under PP0123; prepared by Univ. of Wisconsin, Depts. of Entomology and Dairy Husbandry, submitted by Shell Chemical Corp., New York, N.Y.; CDL:090154-J)
00089555	Shell Chemical Corporation (1957) Phosdrin-(TM) Insecticide Residues in or on Raw Agricultural Commodities. (Unpublished study received Apr 15, 1957 under PP0123, CDL:090154-V)
00089559	Shell Chemical Corporation (1957) Determination of Anticholinesterase in Plant and Animal Tissues. Method dated Mar 1957. (Unpublished study received Apr 15, 1957 under PP0123; CDL: 090154-Z)
00089696	Shell Chemical Company (1961) Supplement to Section D--Pesticide Petition 288. (Unpublished study received Jun 25, 1961 under PP0288; CDL:090310-A)
00089697	Casida, J.E.; Gatterdam, P.E.; Knaak, J.B.; et al. (1958) Bovine metabolism of organophosphate insecticides. Subacute feeding studies with O,O-dimethyl 1-carbomethoxy-1-propen-2-yl phosphate. Journal of Agricultural and Food Chemistry 6(9):658-662. (Also In unpublished submission received Jun 25, 1961 under PP0288; submitted by Shell Chemical Corp., New York, N.Y.; CDL:090310-B)
00089698	Shell Chemical Company (1961) Residues in or on Citrus Resulting from the Application of Phosdrin Insecticide to the Foliage, (Unpublished study received Jun 25, 1961 under PP0288; CDL: 090310-D)
00112690	Shell Chemical Co. (1956) The Results of Tests on the Amount of Residue of the Pesticide Chemical OS 2046 Remaining, Including a Description of the Analytical Methods used. (Compilation; unpublished study received Aug 13, 1956 under PP0078; CDL: 090108-I)
00113304	Shell Chemical Co. (1969) Phosdrin: Residues in Spinach. (Compilation; unpublished study received Sep 25, 1970 under 201-289; CDL:023150-A)

OFFICE OF PESTICIDE PROGRAMS
REGISTRATION STANDARD BIBLIOGRAPHY
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MRID	CITATION
00113306	Shell Chemical Corp. (1960) Phosdrin: Residues in Eggplant and Other Crops. (Compilation; unpublished study received Dec 7, 1959 under PP0235; CDL:092512-A)
00113309	Shell Chemical Corp. (1958) Phosdrin: Residues in Oranges and Other Crops. (Compilation; unpublished study received on unknown date under PP0200; CDL:098743-A)
00113315	Shell Chemical Co. (1962) Phosdrin: Residues in Strawberries and Other Crops. (Compilation; unpublished study received Apr 22, 1963 under unknown admin. no.; CDL:119520-A)
00113316	Berneking, A.; Lau, S.; Stanford, J. (1962) Beta-naphthol and Phosdrin Insecticide Residues on a Field Crop: Special Project SD-62-15. (Unpublished study received May 29, 1963 under unknown admin. no.; submitted by Shell Chemical Co., Washington, DC; CDL:119869-A)
00113318	Shell Chemical Co. (1958) Phosdrin: Residues in Melon. (Compilation; unpublished study received Jun 1, 1958 under unknown admin. no.; CDL:125002-A)
00113320	Shell Chemical Co. (1962) Phosdrin: Residues in Milk and Other Subjects. (Compilation; unpublished study received Jan 29, 1957 under unknown admin. no.; CDL:125010-A)
00113324	Shell Chemical Corp. (1957) Determination of Phosdrin Insecticide Residues in Grapes following Application of This Toxicant. (Unpublished study received Mar 19, 1958 under unknown admin. no.; CDL:125021-A)
00113325	Shell Chemical Co. (1960) Phosdrin: Residues in Grass and Other Subjects. (Compilation; unpublished study received Aug 22, 1960 under unknown admin. no.; CDL-125022-A)
00113326	Shell Chemical Co. (1957) Phosdrin: Residues in Beets and Other Crops. (Compilation; unpublished study received Jun 27, 1958 under unknown admin. no.; CDL:125023-A)
00113329	Shell Chemical Co. (19??) Residues in or on Tomatoes Resulting from the Application of Phosdrin Insecticide to the Foliage. (Unpublished study received Apr 21, 1959 under unknown admin. no.; CDL:125028-A)

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MRID	CITATION
00113334	Shell Development Co. (1964) Determination of Phosdrin Insecticide in Crops and Animal Products: Analytical Method MMS-6/64. (Unpublished study received Jul 1, 1964 under unknown admin. no.; CDL:129696-A)
00126692	Interregional Research Project No. 4 (1982) The Results of Tests on the Amount of Mevinphos Residues Remaining in or on Watercress, Including a Description of the Analytical Method Used. (Compilation; unpublished study received Mar 28, 1983 under 201-289; CDL:071506-A)
00147424	Shell Oil Co. (1985?) Determination of an Acceptable Exposure Level (AEL); [Dislodgeable and Total Residues; Reentry Intervals]. Unpublished study. 7 p.
00147425	Shell Oil Co. (1985) Residue Decline of Phosdrin Insecticide on Various Agricultural Crops. Unpublished compilation. 218 p.
05004151	Stevenson, J.H. (1968) Laboratory studies on the acute contact and oral toxicities of insecticides to honeybees. Annals of Applied Biology 61(3):467-472.
40094601	Hudson, R.H.; Tucker, R.K.; Haegele, M.A. (1984) Handbook of Toxicity of Pesticides to Wildlife. USDI Publication 153, Washington, DC, 90 p.
40098001	Mayer, F.L., Jr. and M.R. Ellersieck (1986) Manual of Acute Toxicity: Interpretation and Data Base for 410 Chemicals and 66 Species of Freshwater Animals. U.S. FWS Resource Publication 160.
40157101	Warren, J. (1987) Soil/Sediment Adsorption/Desorption of [Carbon 14]-Mevinphos: ABC Final Rept. #35285. Unpublished study prepared by ABC Laboratories, Inc. 261 p.
40201401	Schroeder, R.; Daly, I. (1987) Mevinphos-- A Teratology Study in Rats with Mevinphos: [Final Report]: Laboratory Project ID. 85-3009; 85-3008. Unpublished study prepared by Bio/dynamics, Inc. 564 p.
40228401	Mayer, F.L. (1986) Acute Toxicity Handbood of Chemicals to Estuarine Organisms. USEPA, ORD, Gulf Breeze, FL. p. 139.

V. FORMS APPENDICES

Form Approved. OMB No. 2070-0057. Approval expires 11-30-89.

FIFRA SECTION 3(C)(2)(B) SUMMARY SHEET	EPA REGISTRATION NO.
PRODUCT NAME	
APPLICANT'S NAME	DATE GUIDANCE DOCUMENT ISSUED

With respect to the requirement to submit "generic" data imposed by the FIFRA section 3(C)(2)(B) notice contained in the referenced Guidance Document, I am responding in the following manner:

☐ 1. I will submit data in a timely manner to satisfy the following requirements. If the test procedures I will use deviate from (or are not specified in) the Registration Guidelines or the Protocols contained in the Reports of Expert Groups to the Chemicals Group, OECD Chemicals Testing Programme, I enclose the protocols that I will use:

Attach seperate page with a list of the data requirements your company agrees to satisfy.

☐ 2. I have entered into an agreement with one or more other registrants under FIFRA section 3(C)(2)(B)(ii) to satisfy the following data requirements. The tests, and any required protocols, will be submitted to EPA by:

NAME OF OTHER REGISTRANT

Attach list of data requirements

☐ 3. I enclose a completed "Certification of Attempt to Enter Into an Agreement with Other Registrants for Development of Data" with respect to the following data requirements:

☐ 4. I request that you amend my registration by deleting the following uses (this option is not available to applicants for new products):

☐ 5. I request voluntary cancellation of the registration of this product. (This option is not available to applicants for new products.)

REGISTRANT'S AUTHORIZED REPRESENTATIVE	SIGNATURE	DATE

EPA Form 8580-1 (10-82)

OMB Approval No. 2070-0057
Expires 11/30/89

CERTIFICATION OF ATTEMPT TO ENTER INTO AN AGREEMENT WITH OTHER REGISTRANTS FOR DEVELOPMENT OF DATA

(To qualify, certify ALL four items)

1. I am duly authorized to represent the following firm(s) who are subject to the requirements of a Notice under FIFRA Section 3(c)(2)(B) contained in a Guidance Document to submit data concerning the active ingredient:

GUIDANCE DOCUMENT DATE

ACTIVE INGREDIENT

NAME OF FIRM	EPA COMPANY NUMBER

(This firm or group of firms is referred to below as "my firm".)

2. My firm is willing to develop and submit the data as required by that Notice, if necessary. However, my firm would prefer to enter into an agreement with one or more other registrants to develop jointly, or to share in the cost of developing, the following required items or data:

3. My firm has offered in writing to enter into such an agreement. Copies of the offers are attached. That offer was irrevocable and included an offer to be bound by an arbitration decision under FIFRA Section 3(c)(2)(B)(iii) if final agreement on all terms could not be reached otherwise. This offer was made to the following firm(s) on the following date(s):

NAME OF FIRM	DATE OF OFFER

However, none of those firm(s) accepted my offer.

4. My firm requests that EPA not suspend the registration(s) of my firm's product(s), if any of the firms named in paragraph (3) above have agreed to submit the data listed in paragraph (2) above in accordance with the Notice. I understand EPA will promptly inform me whether my firm must submit data to avoid suspension of its registration(s) under FIFRA Section 3(c)(2)(B). (This statement does not apply to applicants for new products.) I give EPA permission to disclose this statement upon request.

TYPED NAME	SIGNATURE	DATE

EPA Form 8580-6

OMB Approval No.
2070-0057
Expires 11/30/89

PRODUCT SPECIFIC DATA REPORT

EPA Reg. No.____________________ Date____________________

Guidance Document for____

Registration Guideline No.	Name of Test	Test not required for my product listed above (check below)	I am complying with data requirements by Citing MRID Number or EPA Accession Number	I am complying with data requirements by Submitting Data (Attached)	(For EPA Use Only) Accession Numbers Assigned
Sec. 158.120 PRODUCT CHEMISTRY					
61-1	Identity of ingredients				
61-2	Statement of composition				
61-3	Discussion of formation of ingredients				
62-1	Preliminary analysis				
62-2	Certification of limits				
62-3	Analytical methods for enforcement limits				
63-2	Color				
63-3	Physical state				
63-4	Odor				
63-5	Melting point				
63-6	Boiling point				
63-7	Density, bulk-density, or specific gravity				
63-8	Solubility				
63-9	Vapor pressure				
63-10	Dissociation constant				
63-11	Octanol/water partition coefficient				
63-12	pH				

EPA Form 8580-4

OMB Approval No.
2070-0057
Expires 11/30/89

PRODUCT SPECIFIC DATA REPORT (cont'd)

EPA Reg. No.______________________ Date______________________

Guidance Document for______________________________________

Registration Guideline No.	Name of Test	Test not required for my product listed above (check below)	I am complying with data requirements by: Citing MRID Number or EPA Accession Number	I am complying with data requirements by: Submitting Data (Attached)	(For EPA Use Only) Accession Numbers Assigned
Sec. 158.120 PRODUCT CHEMISTRY (cont'd)					
63-13	Stability				
63-14	Oxidizing/reducing reaction				
63-15	Flammability				
63-16	Explodability				
63-17	Storage stability				
63-18	Viscosity				
63-19	Miscibility				
63-20	Corrosion characteristics				
63-21	Dielectric breakdown voltage				
Sec. 158.135 TOXICOLOGY					
81-1	Acute oral toxicity, rat				
81-2	Acute dermal toxicity, rabbit				
81-3	Acute inhalation, toxicity, rat				
81-4	Primary eye irritation, rabbit				
81-5	Primary dermal irritation				
81-6	Dermal sensitization,				
81-7	Acute Delayed neurotoxicity, hen				

EPA Form 8580-4 (cont'd)

OMB Approval No. 2070-0057
Expiration Date 11/30/89

GENERIC DATA EXEMPTION STATEMENT

EPA Product Registration Number: ____________________

Registrant's Name and Address: ____

____

As an authorized representative of the registrant of the product identified above, I certify that:

(1) I have read and am familiar with the terms of the Notice from EPA dated ______________ concerning a requirement for submission of "generic" data on the active ingredient ______________________ named under FIFRA Section 3(c)(2)(B).

(2) My firm requests that EPA not suspend the registration of our product, despite our lack of intent to submit the generic data in question, on the grounds that the product contains the active ingredient solely as the result of the incorporation into the product of another product which contains that active ingredient, which is registered under FIFRA Section 3, and which is purchased by us from another producer.

(3) An accurate Confidential Statement of Formula (CSF) for the above-identified product is attached to this statement. That formula statement indicates, by company name, registration number, and product name, the source of the subject active ingredient in my firm's product, or

The CSF dated ____________________ on file with EPA is complete, current and accurate and contains the information requested on the current CSF Form 8570-4. The registered source(s) of the above named active ingredient in my product(s) is/are ________________ and their registration number(s) is/are ____________________.

My firm will apply for an amendment to the registration prior to changing the source of the active ingredient in our product.

(4) I understand, and agree on behalf of my firm, that if at any time any portion of this Statement is no longer true, or if my firm fails to comply with the undertakings made in this Statement, my firm's product's registration may be suspended under FIFRA Section 3(c)(2)(B).

(5) I further understand that if my firm is granted a generic data exemption for the product, my firm relies on the efforts of other persons to provide the Agency with the required generic data. If the registrant(s) who have committed to generate and submit the required data fail to take appropriate steps to meet requirements or are no longer in compliance with this Notice's data requirements, the Agency will consider that both they and my firm are not in compliance and will normally initiate proceedings to suspend the registrations of my firm's product(s) and their product(s), unless my firm commits to submit and submits the required data in the specified time frame. I understand that, in such cases, the Agency generally will not grant a time extension for submitting the data.

Registrant's authorized representative: ________________________________
(Signature

Dated: ____________________ ________________________________
(Typed)

EPA Form 8570-27